File
Gyp Pond
Break

7e

BEKER

Interoffice Memorandum

To: D. Fleming

File Reference:

Copies To: J. Asche
A. Carrozelli
G. Sneddon
D. Dean
K. Rowles
T. McReynolds

Date: January 12, 1977

From: D. Best

Department: Engineering

Location: C. F. White Plant
Conda, Idaho

Subject: COST OF THE #3 GYP POND BREAK ON MARCH 2, 1976

The cost of repairing the #3 gyp pond is divided into 4 sections. These are: 1) Operation of the #2 gyp pond, 2) Repair of the #3 gyp pond, 3) The cost of repairs to the bottom of the #3 tailings pond, and 4) The cost to repair damage caused by the pond break. The cost of each of the above items is presented in table form and then reduced by the amount normally spent to keep the gyp pond operating. This amount is based on allowing \$.80/ton of P_2O_5 produced in the Phos Acid Plant. The amount used in this report is based on the amount of P_2O_5 produced between October, 1975, and January 3, 1977, the period from when we started using the #3 gyp pond to when the dike broke. The total insurance claim is \$1,829,075.62.

The cost of operating the #2 gyp pond from the time of the break until the #3 pond was repaired was \$686,154.28. The monies had to be spent or the plant shutdown. There was no other alternative. The above cost includes getting the pond ready for gyp when the dike first broke and to keep it in operation until the #3 pond was completed. These figures are documented by Purchase Order number and job description in Table I.

The repairs to the #3 gyp pond cost \$676,602.10. These repairs include preparation of the pond for cleaning, the cost of replacing the dikes that were washed out by the break, the replacing of the decant system and the repairing of the ditch between the cooling pond and the #3 gyp pond. The breakdown of this figure is shown in Table II using the same format as Table I.

Table III gives the breakdown of the \$128,731.30 estimated to repair the bottom of the #3 tailings pond. This repair was made necessary when the dike between the #3 tailings pond and the #3 gyp pond was cut to avoid the loss of the cooling pond and to minimize property damage. The damage to the pond was caused because much of the soil in the bottom of the tailings pond is calcium carbonate and is soluble in the acid in the gyp. The repairs were accomplished by ripping the bottom, packing the bottom with a sheepsfoot roller and covering with slimes from the tailings pond.

The cost of damage related to the pond break but not in the ponds themselves is shown in Table IV and is \$40,063.04. The costs are maintenance performed by Beker personnel, repair and/or replacement of electrical equipment damaged by acid water, warehouse issues, and the cost of people kept in the plant.

Items included in Table V but not tabulated in the above tables are \$47,655 for salaries, \$466,869.90 for P_2O_5 lost in the break, and \$217,000 accrued from the P_2O_5 production from October 1975 to January 3, 1977. The salaries are for Beker personnel who engineered and supervised the repairs to the ponds. The value of the P_2O_5 lost in the break is shown in a letter from Mr. Alex Carrozelli to Mr. Edward Humpal on May 12, 1976, and is confirmed by an Interoffice Memorandum from Mr. Gary Dahms to Mr. Alex Carrozelli on December 28, 1976. The credit to the claim is our normal pond operating cost based on $.80/ton of P_2O_5 produced in the Phos Acid Plant from October 1975 to January 3, 1977. This tonnage is 271,244.

The above listed cost of the gyp pond break is tabulated in Table V and shows an amount of liability of $1,829,075.62.

DB/kjp

TABLE I

COST OF OPERATION OF #2 GYP POND

P.O. NUMBER/VENDOR	JOB DESCRIPTION	DOLLARS SPENT
09378 Washington Construction	Equipment and labor to operate the #2 gyp pond	270,629.92
09512 Davis Construction	Work to keep the #2 gyp pond decant clean and to help dry pond to accelerate work	10,292.17
08279 Washington Construction	Prepare the #2 gyp pond to take gyp after break	126,956.40
08068 Washington Construction	Prepare the dike between #2 gyp pond and cooling pond	6,387.78
08365 Washington Construction	For #2 decant building and related dike work also work to contain gyp in #2 pond	206,132.26
08268 Industrial Constructors	Build the #2 decant box	1,315.00
08339 Industrial Constructors	Premium time to build the decant box	268.20
Industrial Constructors	Work related to the break	11,740.89
08277 Industrial Constructors	To build fence to prevent further damage to property	806.69
Industrial Constructors	Work related to break	25,211.54
09158 09181 Roto-Rooter	To clean #2 decant line	149.75 243.50
10784 Davis Construction	Clean #2 decant box	834.23
10790 Davis Construction	Clean #2 decant box	484.83
08114 John B. Church	Stainless steel nails #2 decant	207.60
08122 Action Threaded Products	Bolts #2 decant	41.78
08138 Pace Industries	Driscopipe for #2 decant	5,268.99
08139 C&H Transportation Co.	To transport Driscopipe #2 decant	1,379.42

TABLE I (Continued)

P.O. NUMBER/VENDOR	JOB DESCRIPTION	DOLLARS SPENT
08269 Mark Steele	Stainless steel pipe #2 decant	7,906.60
08432 Gateway Lumber & Sawmill	Rough cut popular #2 decant	264.64
08270 Newman Redwood, Inc.	Redwood #2 decant	1,704.22
09526 Western Transport	Haul slag to #2 gyp pond	5,205.01
09525 Johnson Slag	Slag for #2 gyp pond	408.23
Pace Industries	24" fussion rig	
	TOTAL	$686,154.28

FH0028615

TABLE II

COST OF REPAIRS TO THE #3 GYP POND

P.O. NUMBER/VENDOR	JOB DESCRIPTION	DOLLARS SPENT
09378 Washington Construction	Equipment and labor to drain and repair #3 gyp pond	505,481.13
09389 Washington Construction	Explosives to drain the #3 gyp pond	12,751.24
09340 Washington Construction	Dragline to work the #3 gyp pond	11,397.08
09339 Haderlie	Drain and dry the #3 gyp pond	3,508.50
09512 Davis Construction	Work in #3 pond to clean and drain & repair liner	43,692.51
09024 Washington Construction	Survey crew to map pond	518.00
10359 Davis Construction	Work to drain #3 gyp pond	3,984.74
10366 Davis Construction	Labor to build the #3 decant system	11,053.23
10996 Davis Construction	#3 liner repair	5,379.81
10090 Action Thread	Bolts for decant system	304.08
10089 Paul Roberts	316 s.s. plates for #3 decant	192.73
10107 Gate City Steel	Channel iron for the #3 decant box	1,830.80
10239 Clendenin Bro.	40d Nails 316 Stainless Steel	267.37
10615 Justin Enterprises	Clean out Wye for decant pipe	1,778.00
10684 Staff Industries	Liner materials to repair #3 pond	7,956.00
10664 Staff Industries	Personnel and expenses to supervise liner repairs	
10997 Conda Store	Paper towels to clean liner for repairs	39.14

TABLE II (Continued)

P.O. NUMBER/VENDOR	JOB DESCRIPTION	DOLLARS SPENT
10398 Parson's Ready Mix	Concrete for #3 decant	2,985.45
10609 Parson's Ready Mix	Gravel for #3 decant	638.00
10093 Pace Industries	18" fussion rig for decant system	3,080.00
10092 Pace Industries	12" Driscopipe for pond inlet	19,955.76
10091 Pace Industries	18" Driscopipe for decant	8,628.30
10088 Clendenin Bro.	16d Nails 316 Stainless Nail	139.59
10094 Carl Diebold Lumber Co.	Redwood for #3 decant system	1,597.80
10296 Western Bearing	100 ft. of 6 inch hose to drain pond	1,141.47
10684 IML	Freight for liner material	328.26
09211 Foulger Equipment Co.	Pump for draining #3 pond	7,200.00
09396 Walker Engineering	Work to survey areas to move gyp	1,269.15
08384 W.A. Wahler & Associates	Engineering review of break and ponding	18,257.02
	TOTAL	676,602.10

TABLE III

ESTIMATE OF COST TO REPAIR BOTTOM OF THE NUMBER 3 TAILS POND

EQUIPMENT	COST/WK OPERATED	WEEKS USED	TOTAL COST
D-9 Cat	10,476.60	4	41,906.40
D-8 Cat	9,169.00	4	36,676.00
Sheepsfoot	8,396.60	1½	12,594.90
Sheepsfoot	9,388.50	4	37,554.00
		TOTAL	$128,731.30

TABLE IV

COST TO REPAIR OTHER PLANT DAMAGE CAUSED BY POND FAILURE

P.O. NUMBER/VENDOR	JOB DESCRIPTION	DOLLARS SPENT
08105 Electric Distr.	Electrical materials for pump substation repair	444.82
Electric Wholesalers	Electrical materials for pump substation repair	97.00
08181 General Electric	Electrical materials for pump substation repair	27.00
08267 Beins Oil & Supply	Fencing material to stop further flood damage	155.00
07614	Repair electric equipment damaged by flood	465.00
08256 Westinghouse Electric		1,415.00
F & B Trucking	Truck kept in plant by high water	571.00
Petty Cash:		
Bailey		5.40
Bob Howat		15.00
Beker Labor From:	For damage to motors, pumps and plant equipment affected by pond break.	
Electrical & Instrumentation		6,268.00
General Shop Maint.		4,329.00
Rock Beneficiation Maintenance		3,246.00
Acid Maintenance		6,903.00
Dry Products Maint.		525.00
Warehouse Issue		14,757.62
08258 Bisco	Two propane heaters for dry starter & to keep pump house from freezing.	839.20
	TOTAL	$40,063.04

TABLE V

SUMMARY OF COST

Cost to operate #2 Pond	$ 686,154.28
Cost to repair #3 Pond	676,602.10
Cost to repair bottom of #3 Tailings Pond	128,731.30
Cost to repair damage caused by #3 Pond	40,063.04
Cost of salaries involved in pond repairs	47,655.00
TOTAL DAMAGE	$1,579,205.72
Less normal cost of gyp pond operation	(217,000.00)
Total insurance claim less product loss	1,362,205.72
Product loss in P_2O_5 lost from #3 gyp pond	466,869.90
TOTAL LOSS	$1,829,075.62

May 12, 1976

Mr. Edward G. Humpal
Account Representative
Hobbs Brook Agency
Greenwich Office Park Four
Greenwich, Conn. 06830

Dear Mr. Humpal:

SUBJECT: Soda Springs Conda Plant
Gypsem Pond Dike Rupture

This is further to our April 23 letter on the above.

We now enclose additional supporting documents with regard to the gyp pond break relating to both the dike wall rupture and the loss of P_2O_5.

The P_2O_5 loss is developed on the following basis:

281 Acre Feet, or 92,000,000 gallons
0.8% P_2O_5 = 3,990 Tons
3,990 tons x $117.01 cost per ton = $466,869.90

The gyp break direct damage cost is $59,834.38 as indicated in the attached account 0480-600.

The downtime estimated from March 2 thru March 6 involves a total of 65 hours and 2,104 tons of P_2O_5 and 1,215 tons of H_2SO_4, of production; we are now estimating our loss of net income as a result of this lost production and this will be documented as soon as possible for your review.

In the meantime, your assistnace in submitting this data to underwriters representing our initial claim with regard to this loss will be appreciated. Undoubtably, you will have further inquiries with regards to this data and once you have completed your initial review please do not hesitate to contact this office.

Very truly yours,

Alex F. Carrozelli
Corporate Risk and
Insurance Manager

AFC/rsc

CC: J. Fitteron
H. Hood

Affiliated FM Insurance

New Providence Corporation, Underwriting Manager

LOSS REPORT

DIFFERENCE IN CONDITIONS - MISCELLANEOUS PERILS

FOR BEKER INSUDTRIES CORPORATION
Conda Rd. & Rte. 34 N
Soda Springs, Idaho

INDEX 79228.61A

ACCOUNT 23-28879

DATE OF LOSS March 3,1976

BY R.K. Okimote

DATE INSPECTED June 7,1976
June 8,1976

WITH See Below

LOSS NO. NPC-01220

Conference With Messrs: J. Sneddon, Gen. Mgr; K.R. Rowles, Pers. Mgr.; D. Best, Proj. Engr; C. Whiting, Proj. Eng; G.L. Dahms, Acid Area Supt.

SUMMARY

The dike of Gypsum Pond No. 3 broke at the drain outlet at this Agricultural Chemical Plant. About 92 million gals. of reclaim water dumped onto nearby farm land.

DESCRIPTION

Gypsum Pond No. 1 is a cooling pond where clear water is pumped back into the plant to reclaim the phosphoric acid still in the water. Gypsum Pond No. 2 was not in service. Gypsum Pond No. 3 is divided into two sections. The south section is the Gypsum settling pond and contains about 92 million gals. of water with an 8% concentration of phosphoric acid P_2O_5. The north section is a tailings pond.

INCIDENT

Workmen, building up the dike on Gypsum Pond No. 3 noticed no sign of leakage Monday afternoon. However, Tuesday, March 2, they noticed leakage about 7:15 a.m. at Gypsum Pond No. 3 south section drain outlet and notified superiors who arrived at the leak about 7:45 a.m. The 36 in. diameter drain outlet pipe (reinforced fiberglass) was suspended partially in mid air due to severe wash out under the pipe by a stream of water. Two bulldozers pushed Gypsum and two 20 ton haul trucks dumped rock 4 in. and larger for about 5½ hours (8:00 a.m. - 1:30 p.m.) to block the leak. Plywood sheets, plastic liner, and other fill materials were also used but could not stop the leak, about 1:30 p.m., a 15 ft. wide by 15 ft. deep section broke loose releasing the contents of the pond.

(over)

DAMAGE AND SALVAGE

Ninety-two million gals. of water with an 8% concentration of phosphoric acid were lost. Six electric motors for the transfer pumps had to be rewound. The north dike of Gypsum Pond No. 3 (south section) was cut open to allow drainage into the north section. The hole caused by the leak in the dike was 20 to 30 ft. wide at the top and 20 to 21 ft. deep. The overflow pipe structure and concrete flume were washed out. Gypsum Pond No. 3 is being repaired and will be returned to service.

INTERRUPTION TO PRODUCTION

The two Sulfurice Acid Plants and the Phosphoric Acid Plant were shut down for about 65 hours, March 2 to 6, 1976 due to the time required to clean out the No. 2 pond and install the proper outlet and inlet lines from the acid plants, work was slow due to below freezing weather.

CAUSE

The failure was caused by a leakage around the drain outlet which quickly eroded away the Gypsum fill material and grew more quickly than could be filled.

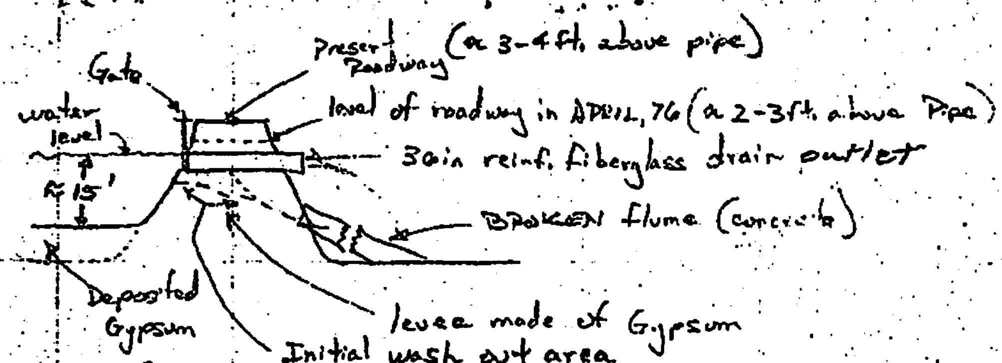
DISCUSSION

The overflow system installed in Gypsum Pond No. 2 was modified from the system used for Gypsum Pond No. 3 and uses a wood overflow box, which is a three sided box with on side open. This box can be adjusted for overflow rate and the level of water maintained above the deposited Gypsum by adding or removing boards on the open side of the box. (See sketch). The "old" system (installed Sept. 1975) for Gypsum Pond No. 3 used more of a dam principle and since the pipe was about 15 ft. higher than the level of the deposited Gypsum, a minium of 15 ft. water level had to be maintained, whereas with the overflow box the level of the water can be kept at 1 ft. above the deposited Gypsum. Using this box system the exposure to leakage is greatly reduced because the amount of water is greatly reduced.

RECOMMENDATIONS

1. The new overflow system should be designed to minimize the chances of leakage around the area of the new drain pipe.

2. The repair work on Gypsum Pond No. 3 (south) should be expedited as much as practical so business interruption will be minimized should Gypsum Pond No. 2 develop a leak.

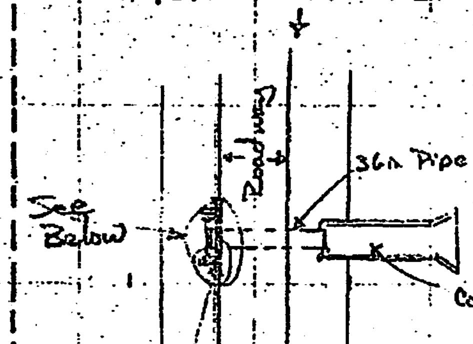


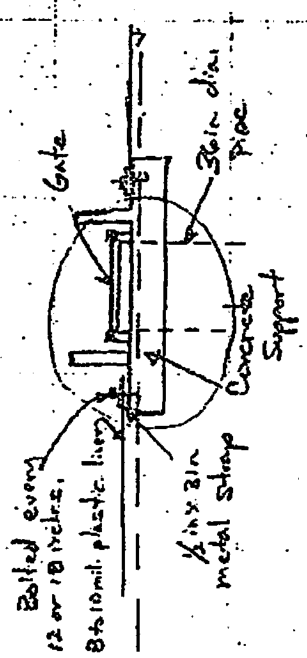
NOTE: Bottom of pond is 10 mil PVC plastic liner & side walls have 8 mil polyester reinforced coated pvc liner.

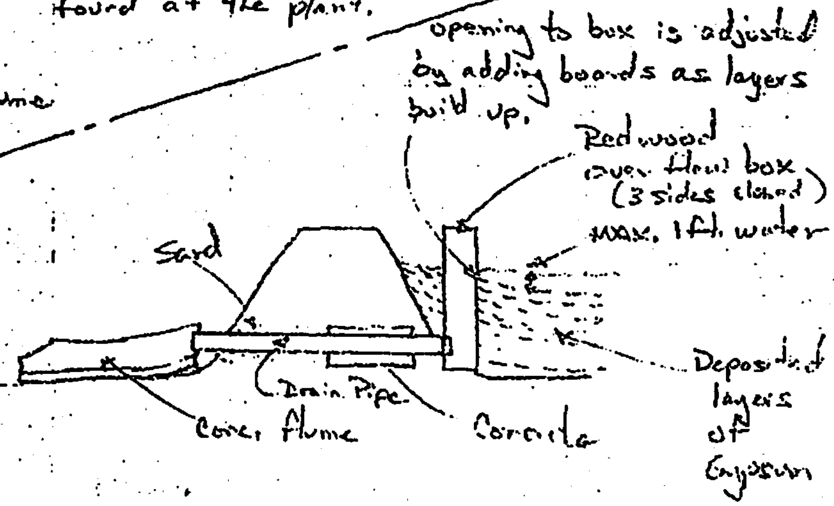
(How Situation Appeared at 8:00 A.M. Tues. March 2, 1976)
Per description & sketch by C. WHITING, Proj. Engr.
SIDE VIEW or cross section looking east.

TOP or PLAN VIEW (as described by G. L. DAVIS, Acid Supt.)

NOTE: NO DRAWINGS OF THE PIPE SUPPORTS & Details of liner seal at drain could be found at the plant.







General features of Proposed new overflow system presently in planning stage.

BEKER INDUSTRIES CORPORATION

SODA SPRINGS, IDAHO

For loss Rept. of R. K. Okimoto
Dated June 8, 1976
Scale: No Scale

Ind. No. 17922.8161
Tr. No.

BEKER *Interoffice Memorandum*

To:	Alex Carrozelli	File Reference:	
Copies To:	G. Sneddon D. Dean G. Greer D. Fleming ✓D. Best	Date:	January 13, 1977
		From:	Gary L. Dahms
		Department:	Phos Acid Administration
		Location:	C. F. White Plant Conda, Idaho

Subject: MEMO TO ALEX CARROZELLI ON 12/28/76

In reference to your questions concerning the Conda plants ability to raise or lower the cooling pond level, all three of the cases in my previous memo have been demonstrated in actual plant practice.

Since the majority of the evaporation in the cooling pond takes place in the summer, the pond has to be pulled down to control its level in the winter months when evaporation is negligible and precipitation is high. The most impressive proof of the ability to control pond level is when the pond has been emptied to repair liner damage and work on the pumping system. The cooling pond has been completely drained twice in the last three years for repairs and then filled back up to an operating level.

GLD/kjp

G L Dahms

Beker Industries Corp.
Box 37, Conda, Idaho 83230
Telephone: 208/547-4381, TWX 910-978-5768

January 7, 1977

Mr. Doug Flint
Tafco Inc.
6905A Oslo Circle
Buena Park, California 90621

Dear Mr. Flint:

The attached report is the supporting information to show the value of the P_2O_5 lost when the gyp pond dike broke in March of 1976. This should answer any questions you had on the availability of the P_2O_5 in the gyp pond. If you have any questions, please feel free to contact either Mr. Gary Dahms or myself.

Yours truly,

David E. Best
Project Engineer

DEB:lw

cc: Dick Fleming

BAKER

Interoffice Memorandum

To: Alex Carrozelli

File Reference:

Copies To: G. Sneddon
D. Dean
L. Hemman
D. Fleming
D. Best

Date: December 28, 1976

From: Gary L. Dahms

Department: Phos Acid Administration

Location: C. F. White Plant
Conda, Idaho

Subject: #3 GYPSUM TAILINGS POND DIKE FAILURE

The acid loss claimed in the #3 Gypsum Tailings Pond Dike Failure was all water soluble, recoverable product. This means that the acid was basically in a useable form. Although it was not concentrated enough to use at this point, all of the raw material costs to make product acid had been put into it. It need only be recycled through the digestion reaction in place of the raw water required for the reaction to be converted to 28% P_2O_5 acid. The only costs to make this conversion would be the pumping costs which would be more than offset by the pumping costs of the well water which is used when pond water is not available.

The volume of solution used in the claim was based only on the liquid which was "free-standing" above the gypsum. Although there was a substantial amount of water in the gypsum, none of this was used because of the difficulty in calculating the amount and the strength of this acid. The solution used in the claim was only that which was already separated from the gypsum solids.

There has been speculation by outside groups that some P_2O_5 is lost from standing in the ponds due to chemical reactions and settling with the gyp. Since we are dealing with the solution which was already separated from the gypsum, there is no basis for the belief that some of it may have settled in with the gypsum tailings. This may occur, but we are not working with the solution in the gypsum. It was already separated from the gypsum.

Our analysis of the gypsum tailings pond system indicated there would be no loss of P_2O_5 due to chemical reactions in the "free-standing" portion of the pond. The pH of the pond water is 1.0 to 1.2 at a temperature of 32°C. At these conditions, all P_2O_5 would exist as H_3PO_4 and the ions necessary to form iron and aluminum phosphate would not be present. The P_2O_5 concentration is less than 1%. With this temperature and P_2O_5 strength the dihydrate form of gypsum is extremely stable (See Figure 5). The solubility of this gypsum in the pond water would be 0.25% (See Figure 1). The free sulfuric acid in the pond is 0.55%. This low concentration of gypsum and relatively high free sulfuric acid would prohibit the loss of any P_2O_5 in the form of dicalcium phosphate in the "free-standing" portion of the pond. Another possible P_2O_5 loss could result from substitution of P_2O_5 in the gypsum crystal lattice which could bind P_2O_5 and precipitate it with the gypsum. As can be seen in Figure 2, the pond is somewhat out of the range at which this can occur (100 G/L = 9% P_2O_5). In addition, the "free-standing" portion of this pond would not have enough gypsum present to promote this reaction.

A certain amount of P_2O_5 upgrading occurs in the pond as it cools. The average temperature of the pond is 43°C at the inlet and 30°C at the outlet. The inlet solution is saturated with sodium and potassium fluosilicates. During the cooling process, the solubility of sodium fluosilicate drops from 1.3% to 0.7%. The solubility of potassium fluosilicate drops from 0.6% to 0.4% (See Figure 3). This loss of diluents would result in a 0.8% upgrading of the P_2O_5 in solution. Even more upgrading would result from the normal evaporation rate in this area.

The P_2O_5 in the pond water is recovered by using it for the water of hydration in the formation of dehydrate gypsum and for the dilution water in the product. Some of this water is added directly to the digestion reaction. The remainder is first used for the three stage countercurrent wash on the filters and then added to the digester. When the water is used in the reaction the P_2O_5 content reports to the 28% P_2O_5 product acid with no further treatment.

A P_2O_5 balance in the pond system is shown in Figures 6,7, and 8. Figure 6 shows a balanced pond system with the phos acid plant operating at 93% total P_2O_5 recovery. Well water is added to the digester. All of the filter wash water comes from the cooling pond.. Figure 7 shows the pond system while the #3 pond was filling up and the water could not be recovered. In this case the sluice water had to be raw water and the amount of wash water was somewhat reduced. Additional well water had to be added to the digestion system to balance the reaction. Figure 8 shows the system which is used when the pond level gets high. This is the system shich would have been used to reclaim the pond water. In this system, very little well water is added to the digestion system. The P_2O_5 which is in the pond water added to the digester reports directly to the product stream and moves on to the evaporation step. This is not a hypothetical case. It has been used in the past to reduce pond levels. When this case is in practice, the actual plant recoveries are 94.9%.

GLD/kjp

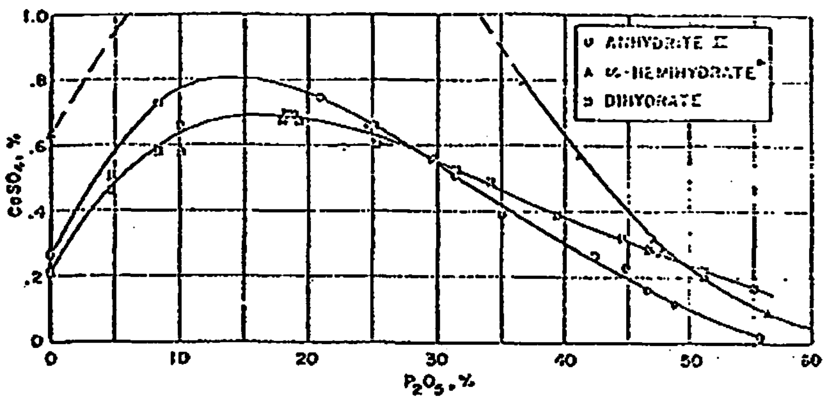


FIG. 9. Solubility of dihydrate, α-hemihydrate*, and anhydrite II in phosphoric acid solutions at 25°C. [After Taperova and Shulgina (6).]

Figure 1

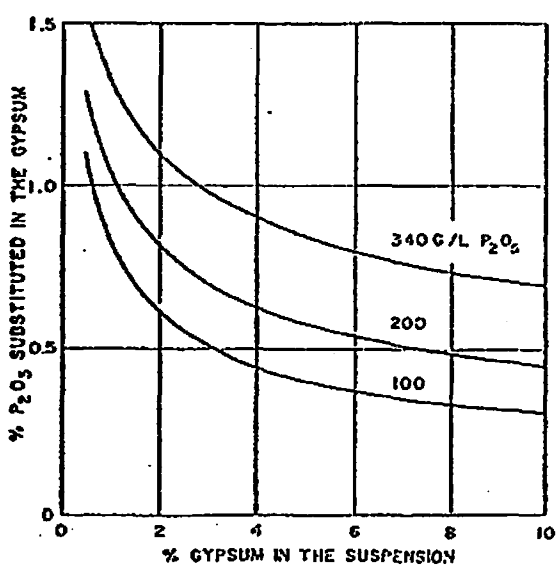
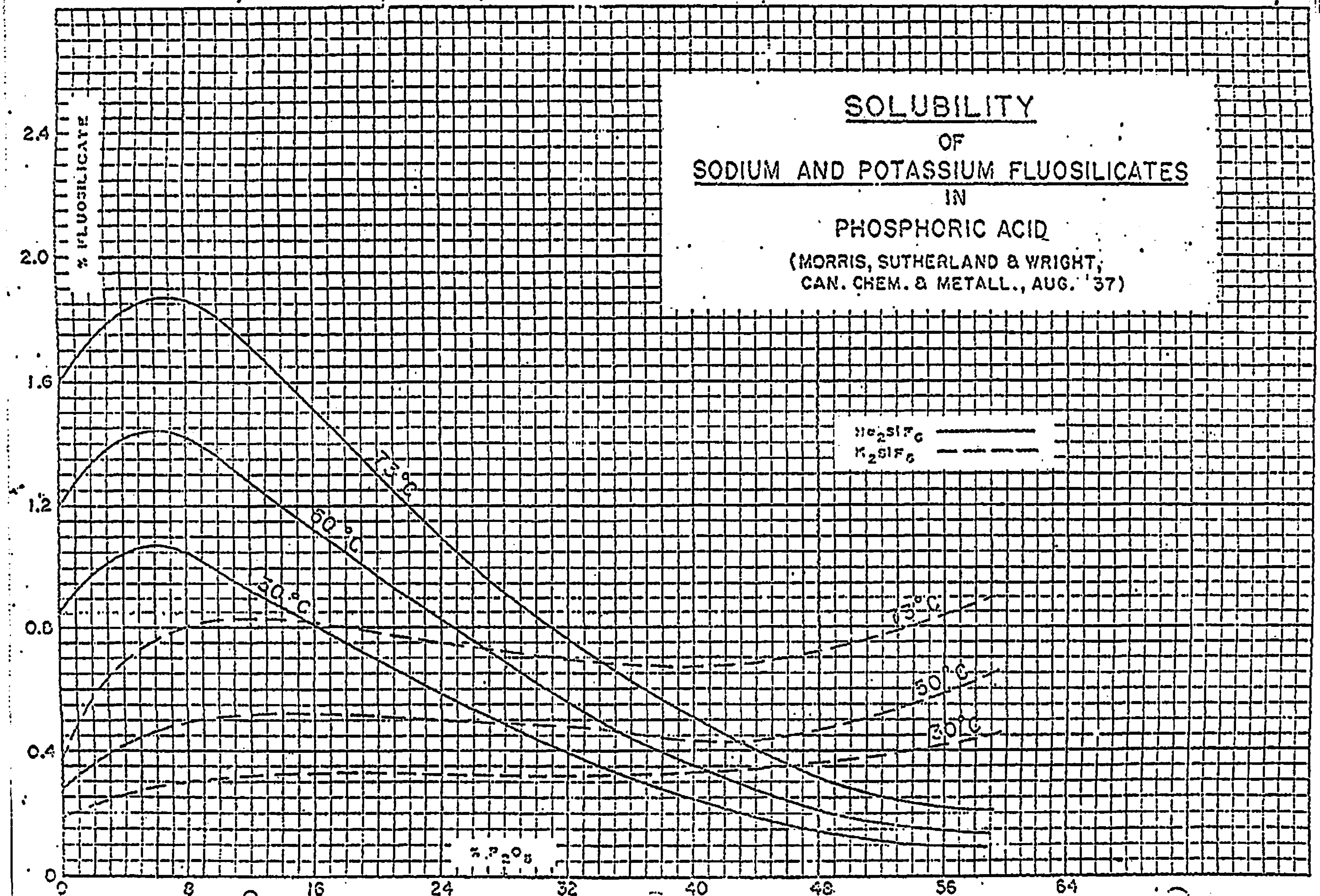


FIG. 8. Substitution of P_2O_5 in gypsum at 70°C as a function of the percentage of solids in suspension and the momentary concentration of P_2O_5 in the mother liquor. [After Früchen and Becker (23).]

Figure 2


SOLUBILITY
OF
SODIUM AND POTASSIUM FLUOSILICATES
IN
PHOSPHORIC ACID
(MORRIS, SUTHERLAND & WRIGHT, CAN. CHEM. & METALL., AUG. '37)
Na_2SiF_6
K_2SiF_6
75°C
50°C
30°C
% FLUOSILICATE
% P_2O_5
0
0.4
0.8
1.2
1.6
2.0
2.4
8
16
24
32
40
48
56
64

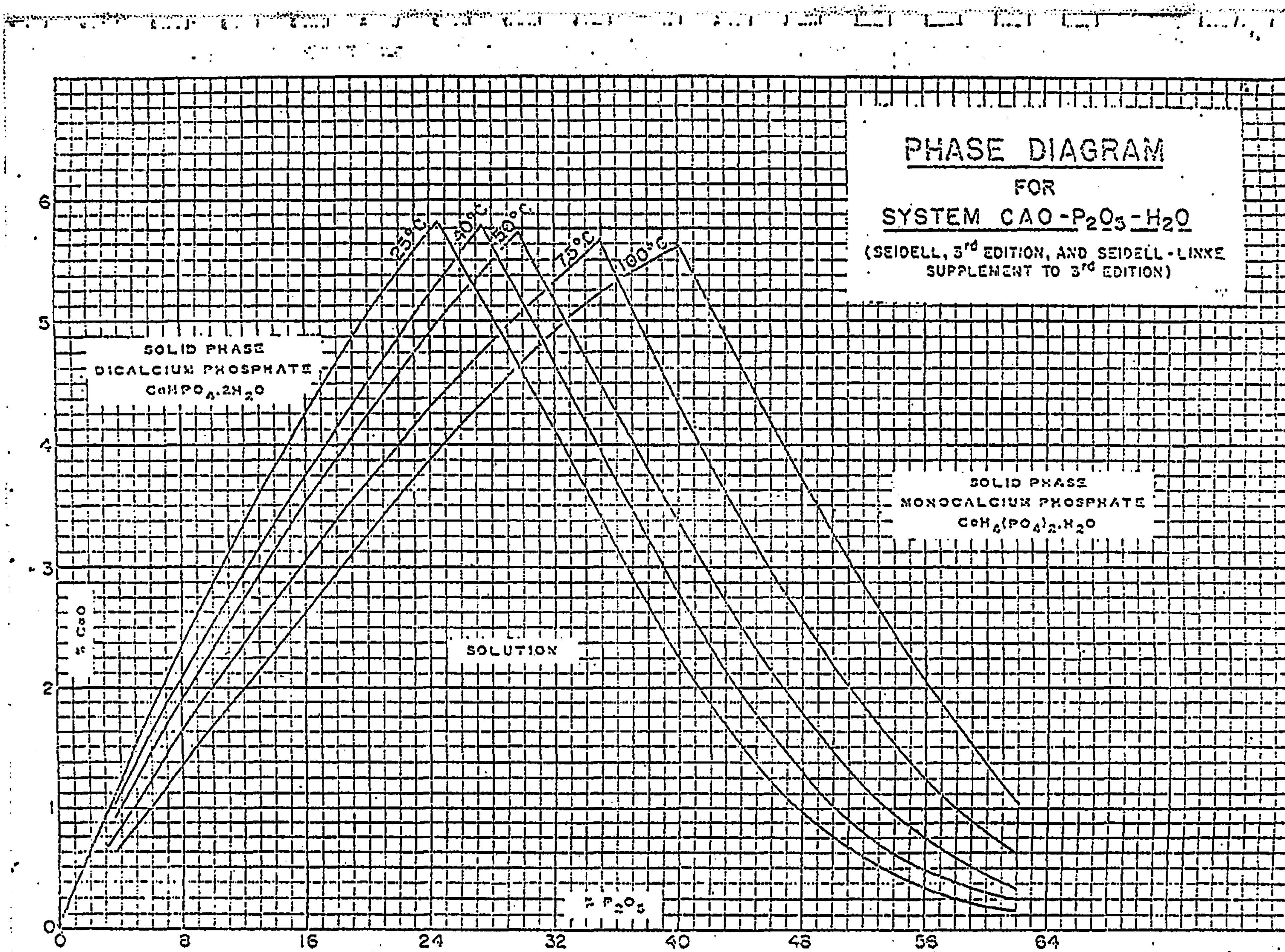
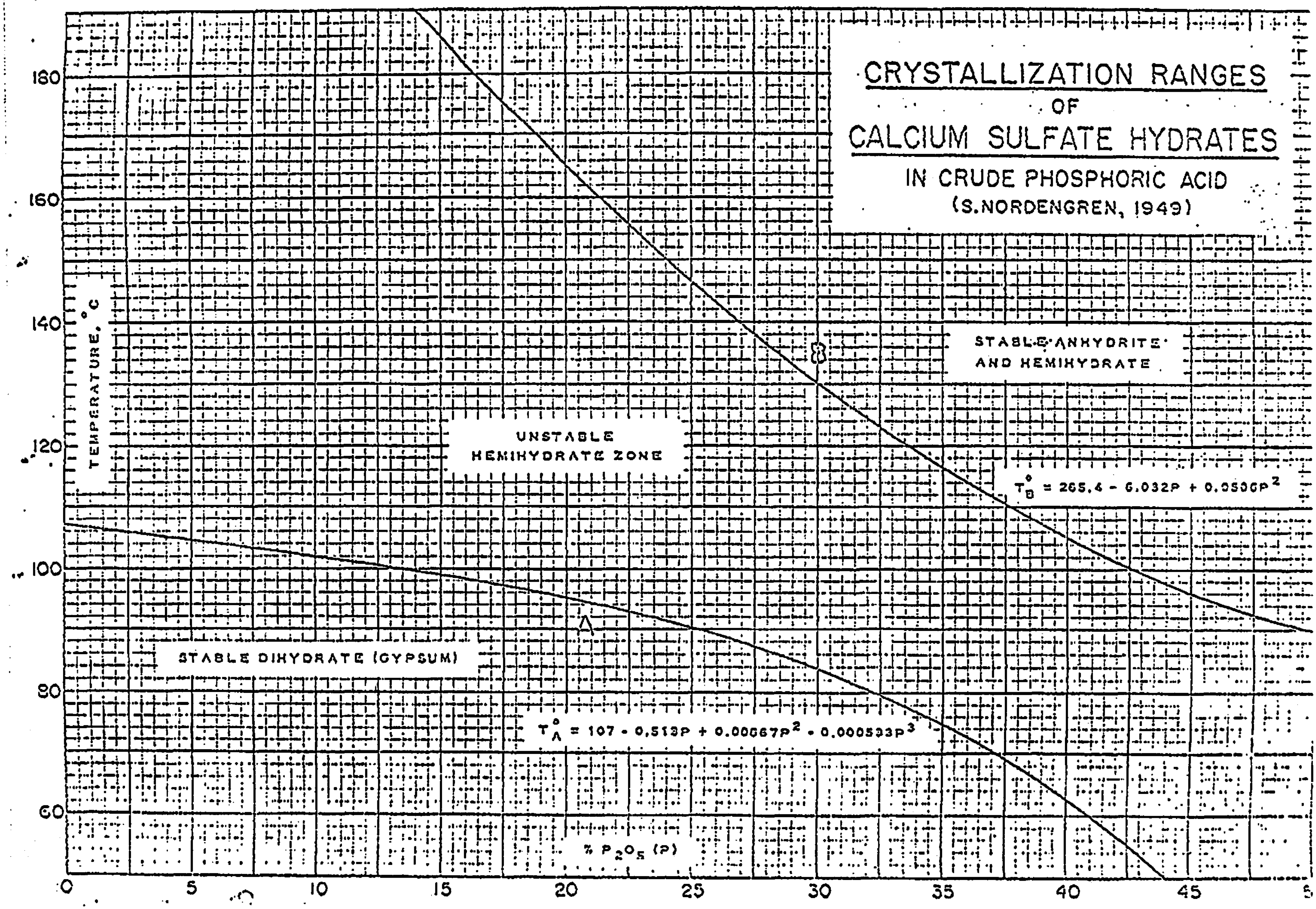

PHASE DIAGRAM
FOR
SYSTEM CAO-P2O5-H2O
(SEIDELL, 3rd EDITION, AND SEIDELL-LINKE SUPPLEMENT TO 3rd EDITION)
SOLID PHASE
DICALCIUM PHOSPHATE
CaHPO4.2H2O
SOLID PHASE
MONOCALCIUM PHOSPHATE
CaH4(PO4)2.H2O
SOLUTION
25°C
40°C
50°C
75°C
100°C
% CaO
% P2O5
0
1
2
3
4
5
6
0
8
16
24
32
40
48
56
64

Figure 4



CRYSTALLIZATION RANGES
OF
CALCIUM SULFATE HYDRATES
IN CRUDE PHOSPHORIC ACID
(S. NORDENGREN, 1949)
STABLE ANHYDRITE
AND HEMIHYDRATE
UNSTABLE
HEMIHYDRATE ZONE
B
A
STABLE DIHYDRATE (GYPSUM)
$T_B^\circ = 265.4 - 6.032P + 0.0506P^2$
$T_A^\circ = 107 - 0.513P + 0.00667P^2 - 0.000533P^3$
TEMPERATURE, °C
% P_2O_5 (P)
180
160
140
120
100
80
60
0
5
10
15
20
25
30
35
40
45
5

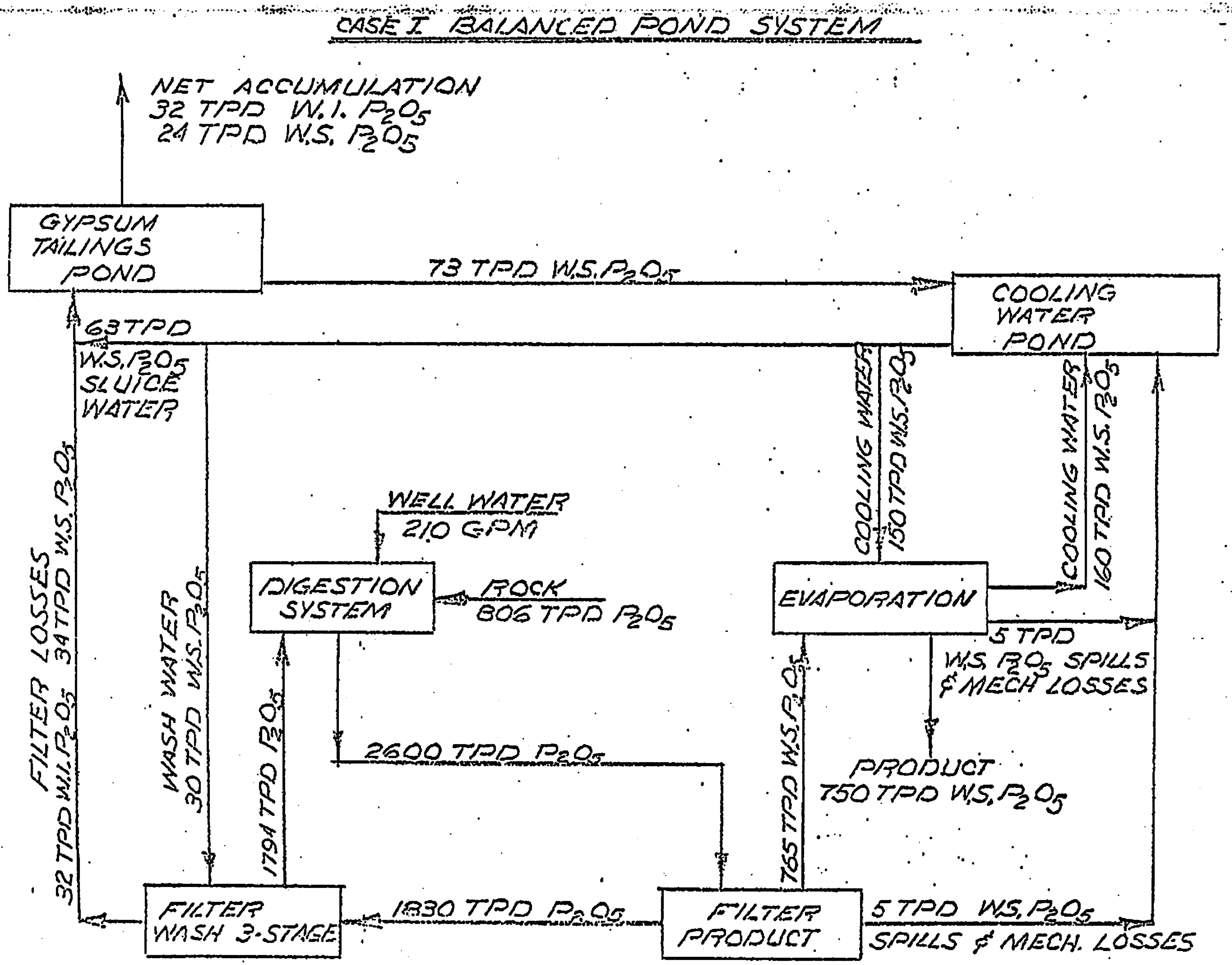


Figure 6

FH0028633

CASE II POND SYSTEM WHILE FILLING NO.3 POND

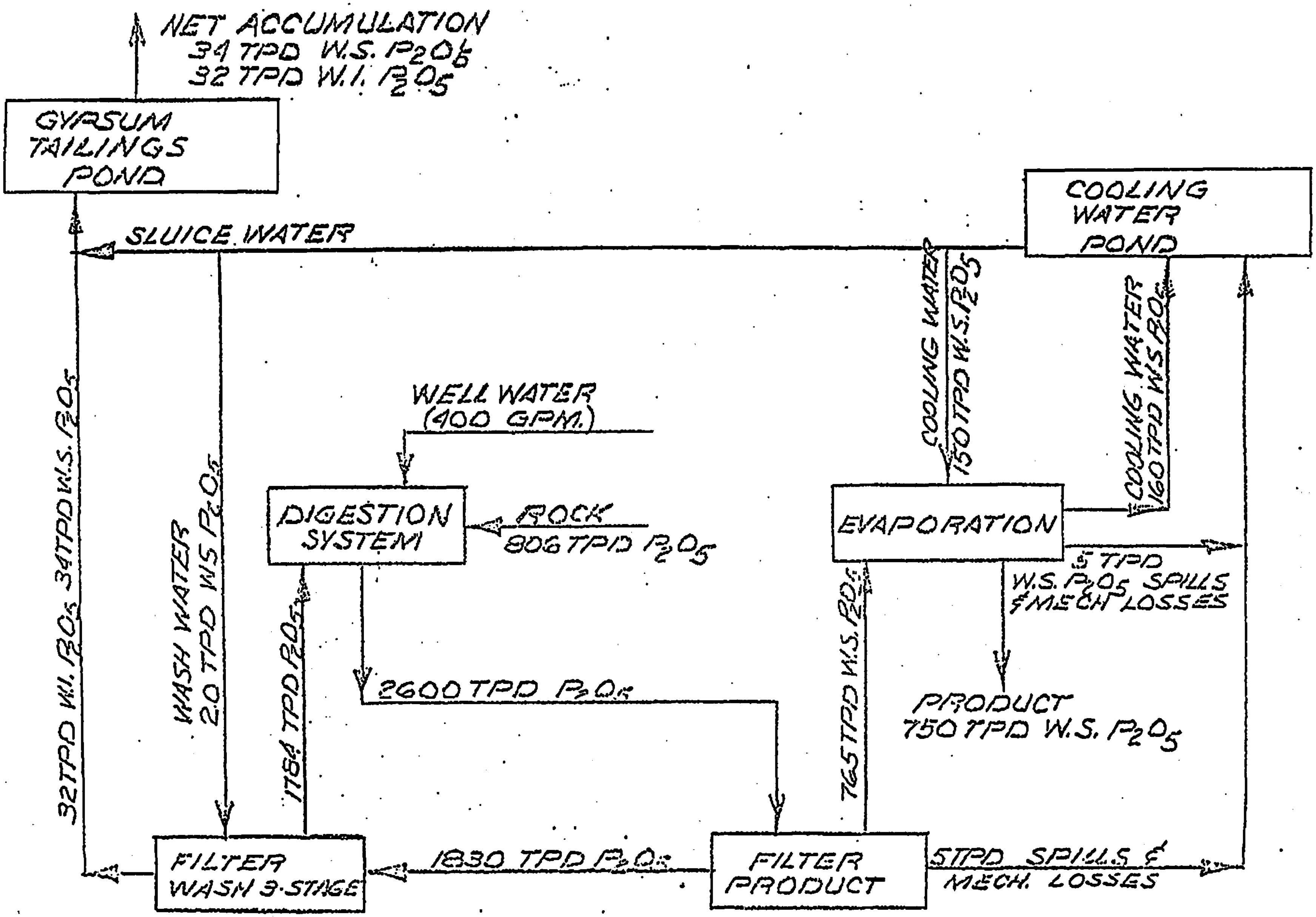


Figure 7

FH0028634

CASE III RECLAIMING P_2O_5 IN GYP TAILINGS POND

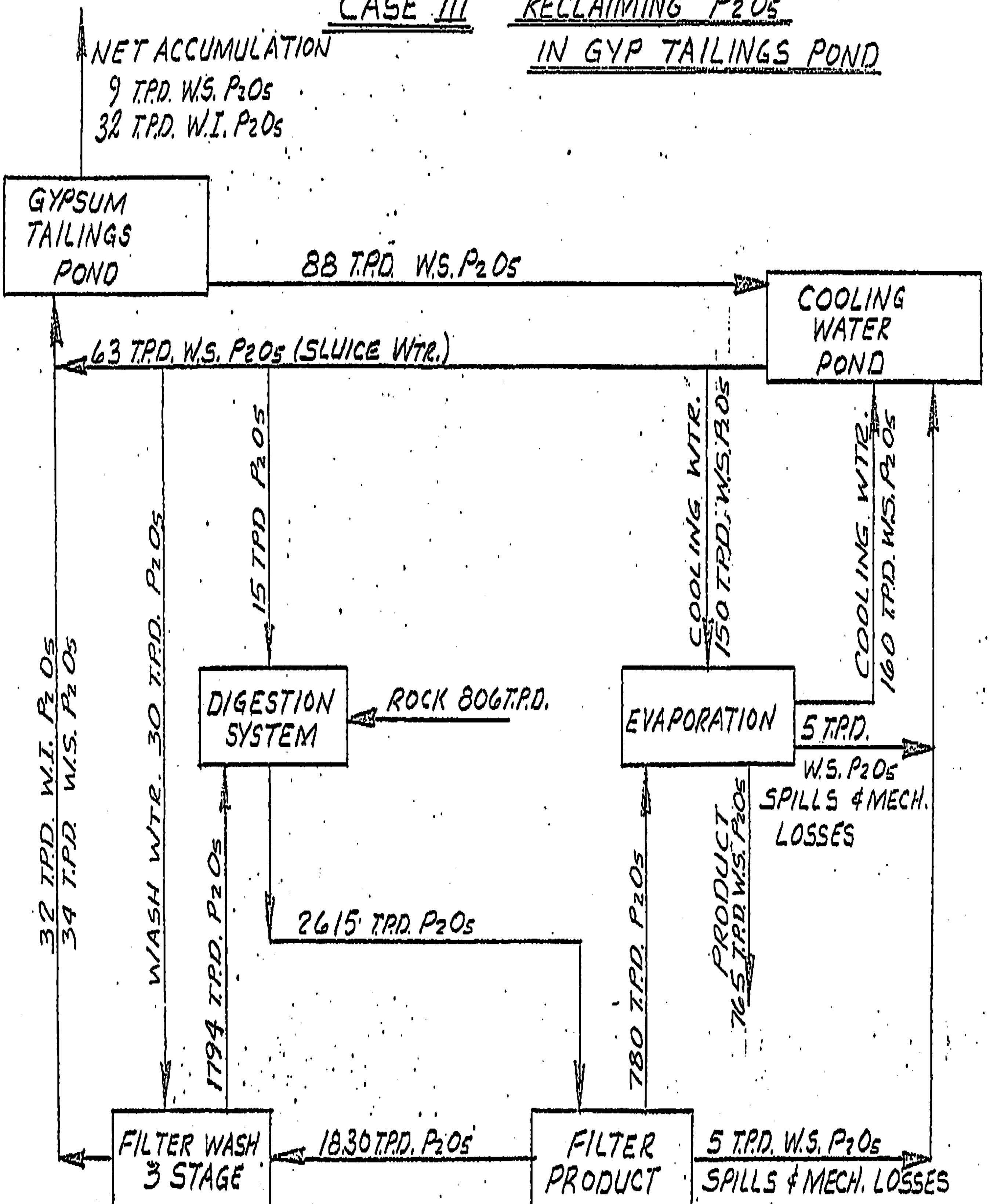


Figure 8

7f ~~8f~~

BEKER

Interoffice Memorandum

To: Gary Dahms

File Reference:

Copies To: G. Sneddon
G. Greer
D. Fleming
K. Rowles
A. Carrozelli

Date: January 19, 1977

From: Donald K. Dean

Department: Plant Administration

Location: C. F. White Plant
Conda, Idaho

Subject: FURTHER DATA FOR THE INSURANCE COMPANY ON THE THERMINOL FIRE AND THE GYP POND BREAK

Per our meeting last week, we agreed to furnish the following information. This information should be directed to Doug Flint with copies to all of the above.

A. <u>SUPERACID UNIT</u>

1. Analyze downtime reports to determine how much production was lost due to lack of cars.

2. Substantiate from operating data prior to January 3, that the old burner was capable of design capacity.

Item #1 I'll handle.

B. <u>GYP POND BREAK</u>

1. Summarize all lab sheets from the date of the break until year end as to average pond water concentrations.

2. Substantiate the material balance previously submitted with backup data, i.e., lab analyses, etc. We only need to use the case we are presently operating under, not all three.

3. After we receive data from Flint on type of unit, we need to install meters and do a water balance on the phos acid plant in conjunction with item #2.

4. Discuss the interface of gypsum and water as to whether single component chemistry prevails in this area. It is my feeling that this is not important as long as they accept item #1. If you agree, you should answer in that vein.

5. Their last question was a 10% difference (lower) in pond volume. At this time I do not think we should raise an issue. If we get everything else, 10% is not that important and they have better backup data, i.e., the survey.

Item #1 has been completed by Kitty, #'s 2 and 3 have to wait on meters, but give me a short memo on item #4 to include with Kitty's data and the superacid information. This should keep us current until Flint gives us water meter data.

DKD/kjp

BEKER

Interoffice Memorandum

7 [illegible]

To: Doug Flint

Copies To: G. Dahms
G. Sneddon
G. Greer
D. Fleming
K. Rowles
A. Carrozelli

File Reference:

Date: January 25, 1977

From: Donald K. Dean

Department: Plant Administration

Location: C. F. White Plant
Conda, Idaho

Subject: DATA FOR INSURANCE CLAIM ON GYP POND BREAK AND DOWTHERM FIRE

Per our meeting on January 17, 1977, we are submitting the attached information to further substantiate our insurance claims on the gyp pond break and the Dowtherm fire.

DKD/kjp

BEKER

Interoffice Memorandum

To: Doug Flint

File Reference:

Copies To: G. Dahms
G. Sneddon
G. Greer
D. Fleming
K. Rowles
A. Carrozelli

Date: January 20, 1977

From: Donald K. Dean

Department: Plant Administration

Location: C. F. White Plant
Conda, Idaho

Subject:

The following is a summary of the analysis of Beker Downtime reports to determine how much super acid could have been produced if cars had been available at all times when needed.

Two facts should be kept in mind while reviewing these numbers which affect the total production possible.

1. Our downtime reports do not reflect when a unit is running at reduced rates for any reason. In actuality, we ran at reduced rates most of the time, waiting for car arrivals in order to minimize the number of startups and shutdowns on the unit which increases mechanical problems.

   Given any set of conversion and concentration guidelines, the plant is no harder to run at full rate than at reduced rates, Table #2 at the back of this report shows what would have been possible using actual production highs and backing out only mechanical downtime.

2. The second item to keep in mind is the centrifuge. It is our contention that the installation of the centrifuge actually lowered on stream time due to increasing frequency of boilout and that its contribution was to quality and not production volume. Whether or not our acid was soluble without the centrifuge is conjecture and in any case we feel the unit could have been in operation (not completed) in five days.

The analysis is based on the following assumptions:

a. The fire occurred January 3, 1976, and the plant was started up on April 26, 1976, for a total downtime of 114 days.

b. We took the actual operating log for the first 114 days the plant was actually in operation beginning April 26, (excluding the period from June 1, until August 2, when the entire plant was down. This period ended October 16, 1976.

It is conservative to assume that our learning curve during this time would be the same as in the January startup. In fact, the rate of learning should have been greater in January due to increased pressure from the sales group as January through April represents the large market while May through July there is very little market.

As always, all production reports and downtime reports are available to substantiate these numbers.

TABLE I

ACTUAL SUPER ACID PRODUCTION WITH ADJUSTMENT MADE FOR DOWNTIME WHEN NO CARS WERE AVAILABLE

	NUMBER OF DAYS	MONTH	TONS ACT. PRODUCED	CALENDAR HOURS	TOTAL D.T. HOURS	HRLY. RATE OF PRODUCTION	D.T. HRS. DUE TO CARS	PROD. LOST DUE TO CARS	TOTAL POSS. PRODUCTION
	37 *	May *	2,298	888	270.6	3.72	191.8	714	3,012
	30	August	2,367	720	220	4.73	68	322	2,689
	30	September	3,111	720	275	6.99	256	1,790	4,901
	17	October	765	408	276	5.80	215	1,247	2,012
Total	114		8,541	2,736	1,041.6		730.8	4,073	12,614

* Includes 6 days in April

The following represents possible production if rates were never limited except for mechanical problems and conversion percentages.

This table was compiled by taking the highest established rate times the adjusted running hours (downtime for lack of cars removed) until a new daily high was established, then repeating the process.

DATE ESTABLISHED	RATE	NUMBER OF DAYS	D.T. HOURS	RUNNING HOURS	PRODUCTION POSSIBLE
4/26	115 Tons	15	41	319	1,529
5/11	147	1	0	24	147
5/12	164	2	0	48	328
5/14	170	58	213.5	1,178.5	8,348
9/07	194	11	0	264	2,134
9/18	196	6	0	144	1,176
9/24	256	21	61	443	4,725
TABLE #2		TOTAL PRODUCTION			18,387

The above table using demonstrated production capacity compensates for all times we ran at reduced rates due to lack of cars and further substantiates our original claim of 14,719.5 tons and makes the centrifuge question even less important.

Doug Flint
January 20, 1977
Page Four

ACTUAL PRODUCTION - FIRST 114 DAYS AFTER SECOND STARTUP

PERIOD ENDING 7:00 A.M.	APRIL	MAY	AUGUST	SEPTEMBER	OCTOBER
2	-	70	-	127	28
3	-	35	-	119	-
4	-	70	-	37	-
5	-	64	-	130	-
6	-	102	65	155	-
7	-	56	-	194	-
8	-	115	-	192	86
9	-	-	-	169	203
10	-	66	100	68	-
11	-	147	124	-	-
12	-	164	113	-	-
13	-	71	111	-	125
14	-	170	110	-	225
15	-	150	125	50	98
16	-	145	130	158	-
17	-	40	20	192	-
18	-	60	-	196	-
19	-	58	49	177	
20	-	36	126	195	-
21	-	-	135	110	-
22	-	-	143	-	-
23	-	-	145	112	-
24	-	-	121	256	-
25	-	-	7	144	-
26	115	20	67	109	-
27	92	140	100	-	-
28	69	119	141	-	-
29	30	70	106	-	-
30	24	[illegible]	[illegible]	[illegible]	-
31	-	[illegible]	[illegible]	-	-
1	-	[illegible]	[illegible]	[illegible]	-
	[illegible]	[illegible]	2,367	3,[illegible]	765

FH0028641

Doug Flint
January 20, 1977
Page Five

	DATE PERIOD ENDING 7:00 A.M.	DOWNTIME DUE TO LACK OF CARS		ALL OTHER DOWNTIME
	5/01	-		12.00
	5/04	-		3.00
	5/07	-		2.30
	5/09	-		12.00
	5/10	-		9.50
	5/19	-		14.00
	5/21	-		24.00
	5/22	24.00		-
	5/23	24.00		-
	5/24	24.00		-
	5/25	24.00		-
	5/26	9.75		-
	5/29	14.00		-
	5/30	24.00		-
	5/31	24.00		-
	6/01	24.00		-
	43 Days	287.75	Plant Wide Shutdown	78.80
Phos Up	8/03	24.00		-
	8/04	24.00		-
	8/05	20.00		-
	8/07	-		24.00
	8/08	-		24.00
	8/09	-		15.25
	8/10	-		.50
	8/12	-		.25
	8/17	-		23.00
	8/18	-		24.00
	8/19	-		17.00
	8/25	-		23.00
	8/26	-		1.00
August	31 Days	[illegible].00		[illegible].00

FH0028642

	DATE PERIOD ENDING 7:00 A.M.	DOWNTIME DUE TO LACK OF CARS	ALL OTHER DOWNTIME
	9/04	–	17.50
	9/05	–	6.00
	9/10	16.00	–
	9/11	24.00	–
	9/12	24.00	–
	9/13	24.00	–
	9/14	24.00	–
	9/15	8.00	–
	9/21	12.00	–
	9/22	24.00	–
	9/25	4.00	–
	9/26	12.00	–
	9/27	24.00	–
	9/28	24.00	–
	9/29	24.00	–
	9/30	12.00	–
September	30 Days	256.00	23.50
	10/02	19.00	–
	10/03	24.00	–
	10/04	24.00	–
	10/05	24.00	–
	10/06	24.00	–
	10/07	16.00	–
	10/08	–	5.00
	10/09	–	4.00
	10/11	–	24.00
	10/12	–	24.00
	10/14	–	4.00
	10/15	12.00	–
	10/16	24.00	–
	10/17	24.00	–
	10/18	24.00	–

DKD/kjp

BEKER

Interoffice Memorandum

To: Donald K. Dean

File Reference:

Copies To: G. Sneddon
G. Greer
D. Fleming
K. Rowles
A. Carrozelli

Date: January 20, 1977

From: Gary L. Dahms GLD

Department: Phos Acid Administration

Location: C. F. White Plant
Conda, Idaho

Subject: FURTHER DATA FOR THE INSURANCE COMPANY ON THE GYP POND BREAK

The question of whether single component chemistry prevails at the gypsum-water interface in the gyp pond is not important to the determination of P_2O_5 concentration in the free standing water portion of the pond. Mr. Flint of Tafco, has stated that a large amount of pond water would be in with the gypsum solids. Although we disagree on the amount, we basically do not dispute this point. Since this water is already in with the gyp, we do not believe the "free standing" water should be affected by the reactions taking place in the gypsum. The water which remains in the settled gypsum would be more than sufficient to supply the various salt formation reactions which would take place there.

GLD/kjp

FH0028644

BEKER Interoffice Memorandum

To: Doug Flint

File Reference:

Copies To: G. Dahms
G. Sneddon
G. Greer
D. Fleming
K. Rowles
A. Carrozelli

Date: January 20, 1977

From: Donald K. Dean

Department: Plant Administration

Location: C. F. White Plant
Conda, Idaho

Subject: FURTHER DATA FOR INSURANCE COMPANY REGARDING THE GYP POND BREAKAGE

Summarized below is an average by month of the cooling pond water analyses.

MONTH		POND H_2O	FILTER WASH	A & B EVAP.	C EVAP.	4 & 5 EVAP.	SUMP PUMP	#2 FILT. SEAL	BAROM. SEAL	#1 VAC. COOLER	SUPER SEAL
March	1976	.54	.54	.55	.50	.55	.36	.30	.50	.54	-
April		.57	.54	.54	.52	.57	.26	.08	.56	.57	-
May		.68	.65	.66	.63	.66	.35	.04	.65	.66	-
June		.73	.69	.69	.64	.69	.23	.09	.68	.66	-
August		.81	.77	.82	.80	.80	.59	.10	.79	.82	-
September		.78	.74	.78	.72	.77	.45	.05	.75	.78	-
October		.82	.82	.82	.78	.79	.54	.07	.78	.79	-
November		.93	.92	.91	.89	.91	.58	.13	.91	.89	-
December		.98	.92	.96	.95	.92	.39	.07	.90	.93	.96
January	1977	.90	.86	.90	.88	.87	.24	.03	.84	.85	.84

Backup for the above summary by day by month is attached.

Also attached are two copies of analyses taken on the gyp pond water prior to the gyp pond break.

DKD/kjp

* June had only 3 days to average.
** January averages are for 12 days only.

FH0028645

MONTH

March 1976	Pond H_2O	Filter Wash	A & B Evap	C Evap	4 & 5 Evap	Sump Pump	#2 Fil. Seal	Barom. Seal	#1 Vac. Cooler	Super Seal
1										
2										
3										
4	.56	-	-	-	-	-	Not Averaged 24.95 Bad Sample	.15	-	-
5	.55	.52	.52	.52	-	.37	-	.24	.53	
6	.60	.52	.56	.56	.56	.65	.02	.55	.57	
7	.51	.54	.55	.53	.53	.49	.04	.46	.52	
8	.59	.53	.57	.62	.56	.67	.09	.45	.57	
9	.56	.60	.54	.54	.54	.44	.01	.60	.57	
10	.60	.54	.56	.58	.58	.45	.10	.45	.55	
11	.55	.51	.57	48	.54	.19	.20	.45	53	
12	.56	.55	.56	.50	.57	.68	.03	.54	.56	
13	.59	.55	.57	.52	.58	.67	1.34	.53	.54	
14	.58	.52	.55	.47	.54	.34	.11	.57	.54	
15	.56	.59	.56	.53	.56	.31	.60	.62	.53	
16	.57	.68	.57	.56	.58	.35	2.51	.72	.62	
17	.58	.61	.67	-	.57	.35	.01	.55	.54	
18	.54	.49	.54	.44	.53	.45	.03	.52	.53	
19	.56	.49	.53	.45	.52	.18	.03	.51	.54	
20	.56	.48	.56	.50	.54	.24	.01	.51	.53	
21	.55	.55	.60	.54	.55	.34	.04	.60	.57	
22	.56	.51	.53	.48	.53	.53	.33	.51	.53	
23	.57	.52	.54	.45	.59	.25	1.20	.52	.53	
24	.56	.50	.56	.45	.54	.18	.07	.53	.54	
25	.54	.55	.55	.44	.51	.09	.01	.51	.52	
26	.54	.51	.50	.46	.52	.04	.24	.50	.52	
27	.52	.47	.52	.43	.51	.13	-	.46	.49	
28	.51	.43	.51	.41	.49	.10	.01	.44	.49	
29	.53	.57	.50	.50	.34	.11	-	.52	.50	
30	.53	.49	.51	.49	.51	1.02	.05	.52	.50	
31	.53	.66	.53	.47	.87	.22	.01	.58	.52	
Average/Month	.54	.54	.55	.50	.55	.36	.30	.50	.54	

FH0028646

MONTH

April 1976

Day	Pond H_2O	Filter Wash	A & B Evap	C Evap	4 & 5 Evap	Sump Pump	#2 Fil. Seal	Barom. Seal	#1 Vac. Cooler	Super Seal
1	.53	.58	.51	.54	.52	.21	.01	.68	.60	
2	.61	.55	.58	.28	.75	.40	.05	.72	.57	
3	.56	.50	.56	.48	.55	.18	-	.48	.52	
4	.52	.48	.54	.44	.54	.11	-	.49	.49	
5	.59	.51	.54	.48	.56	.11	.01	.52	.56	
6	.56	.52	.56	.49	.60	.13	.06	.53	.54	
7	.54	.51	.56	.45	.57	.09	-	.53	.54	
8	.58	.51	.57	.53	.58	.24	.07	.53	.57	
9	.56	.52	.55	.55	.57	.20	.01	.55	.59	
10	.59	.53	.56	.52	.51	.14	.04	.52	.57	
11	.56	.67	.57	.50	.58	.60	.01	.55	.57	
12	.62	.59	.80	.55	.59	.18	.45	.58	.61	
13	.57	.49	.63	.52	.71	.14	.26	.59	.68	
14	.60	.54	.61	.50	.57	.26	.02	.56	.56	
15	.54	.49	.54	.45	.55	.22	.43	.53	.56	
16	.58	.53	.58	.53	.55	.13	.03	.55	.56	
17	.57	.52	.54	.55	.53	.13	-	.56	.54	
18	.55	.51	.56	.54	.54	.14	.01	.50	.52	
19	.58	.55	.56	.59	.57	.33	.02	.56	.58	
20	.57	.49	.58	.53	.56	.20	.13	.53	.59	
21	.56	.53	.55	.51	.54	.24	.05	.53	.56	
22	.59	.54	.56	.57	.55	.15	.03	.53	.57	
23	.59	.55	.63	.59	.59	.27	.10	.57	.59	
24	.56	.52	.54	.57	.57	.41	.05	.55	.52	
25	.56	.52	.46	.47	.44	.70	.02	.65	.64	
26	.57	.60	.56	.61	.53	.46	.05	.54	.67	
27	.60	.57	.57	.55	.56	.75	.09	.58	.57	
28	.59	.55	.61	.58	.57	.22	.07	.62	.62	
29	.59	.55	.58	.56	.61	.34	.10	.51	.55	
30	.62	.56	.69	.54	.63	.11	.12	.53	.61	
31										
Average/Month	.57	.54	.54	.52	.57	.26	.08	.56	.57	

MONTH

May 1976

	Pond H_2O	Filter Wash	A & B Evap	C Evap	4 & 5 Evap	Sump Pump	#2 Fil. Seal	Barom. Seal	#1 Vac. Cooler	Super Seal
1	.56	.53	.55	.55	.55	.20	.05	.52	.54	
2	.57	.54	.58	.53	.55	.23	.03	.52	.55	
3	.56	.56	.59	.60	.56	.16	.02	.53	.54	
4	.61	.70	.58	.40	.60	.23	.01	.61	.56	
5	.63	.63	.59	.56	.60	.23	.02	.62	.59	
6	.63	.66	.62	.66	.61	.17	.13	.65	.62	
7	.66	.67	.60	.58	.62	.18	.01	.59	.62	
8	.65	.67	.62	.62	.63	.14	.01	.64	.63	
9	.65	.70	.63	.61	.64	.18	.01	.61	.63	
10	.71	.57	.62	.56	.62	.57	.14	.84	.62	
11	.68	.60	.64	.68	.74	1.33	.03	.61	.64	
12	.67	.74	.67	.54	.68	.37	.05	.69	.64	
13	.60	.60	.61	.57	.61	.25	—	.58	.60	
14	.71	.69	.61	.64	.64	.23	.19	.73	.64	
15	.68	.69	.68	.65	.76	.27	-	.81	.77	
16	.72	.63	.69	.69	.68	.23	.09	.67	.68	
17	.70	.64	.74	.67	.75	.40	.01	.63	.65	
18	.70	.79	.71	.72	.71	.67	-	.66	.70	
19	.72	.66	.66	.65	.68	.48	-	.78	.85	
20	.78	.66	.68	.57	.75	.46	-	.63	.68	
21	.73	.63	.69	-	-	.32	-	.65	.67	
22	.70	.71	.70	-	.66	.42	-	.67	.67	
23	.69	.62	.66	-	.67	.37	.06	.62	.66	
24	.65	.60	.68	-	.71	.18	.01	.61	.64	
25	.70	.61	.78	.68	.77	.17	.05	.64	.65	
26	.71	.71	.67	.71	.66	.28	.01	.70	.71	
27	.72	.70	.75	.83	.69	.48	.02	.65	.90	
28	.69	.67	.69	.66	.66	.55	-	.67	.69	
29	.75	.66	.68	.68	.68	.57	.02	.71	.69	
30	.71	.68	.71	.67	.68	.38	-	.65	.70	
31	.69	.66	.71	.70	.66	.26	.01	.66	.68	
Average/Month	.68	.65	.66	.63	.66	.35	.04	.65	.66	

MONTH JUNE 1976	Pond H_2O	Filter Wash	A & B Evap	C Evap	4 & 5 Evap	Sump Pump	#2 Fil. Seal	Barom. Seal	#1 Vac. Cooler	Super Seal
1	.72	.72	.71	.64	.70	-.36	.02	.74	.69	
2	.74	.70	.69	-	.67	.29	.01	.66	.66	
3	.73	.65	.66	-	.70	.04	.25	.64	.64	
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
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21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
Average/Month	.73	.69	.69	.64	.69	.23	.09	.68	.66	

FH0028649

MONTH August 1976	Pond H_2O	Filter Wash	A & B Evap	C Evap	4 & 5 Evap	Sump Pump	#2 Fil. Seal	Barom. Seal	#1 Vac. Cooler	Super Seal
1										
2	.83	.83	-	-	.96	.81	-	.81	.79	
3	.82	.86	.84	.85	.81	.89	-	.97	.78	
4	.80	.74	.82	.79	.78	.44	-	.73	.79	
5	.79	.73	.78	.75	.77	.63	.01	.74	.78	
6	.81	.78	.81	.80	.81	.65	.03	.76	.79	
7	.81	.77	.79	.80	.79	.73	-	.77	1.02	
8	.81	.79	.81	.78	.82	.52	.04	.80	.82	
9	.81	.78	.77	.78	.77	.68	.02	.82	.79	
10	.77	.78	.82	.84	.77	.92	-	.77	.81	
11	.82	.75	.74	.80	.78	.85	.85	.76	.77	
12	.78	.72	.76	.84	.77	.78	.01	.74	.76	
13	.79	.75	.88	.75	.76	.45	-	.78	.77	
14	.81	.80	.86	.87	.85	.37	-	.80	.79	
15	.82	.74	.80	.76	.80	.51	.05	.78	.82	
16	.87	.85	.93	-	.78	.70	.26	.79	.83	
17	.83	.77	.82	.76	.77	.34	.11	.78	.98	
18	.85	.83	.82	.77	.80	.48	.03	.82	.89	
19	.84	.79	.83	.81	.83	.90	.29	.84	.85	
20	.81	.76	.80	.79	.79	.35	.01	.77	.80	
21	.83	.79	.86	.81	.80	.52	-	.76	.81	
22	.90	.86	.97	.92	.84	.38	-	.82	.90	
23	.89	.87	.83	.95	.87	.61	.02	.89	.83	
24	.83	.77	.79	.78	.78	.53	-	.79	.79	
25	.74	.74	.74	.74	.73	.64	.02	.66	.74	
26	.84	.77	.80	.80	.80	.71	.03	.78	.89	
27	.79	.73	.84	.76	.87	.49	.01	.91	.82	
28	.80	.69	.85	.69	.84	.60	-	.78	.79	
29	.81	.69	1.03	.74	.82	.36	-	.74	.73	
30	.76	.71	.72	.77	.70	.37	.01	.76	.73	
31	.71	.72	.78	.75	.79	.53	.02	.74	.79	
Average/Month	.81	.77	.82	.80	.80	.59	.10	.79	.82	

FH0028650

MONTH		Pond H_2O	Filter Wash	A & B Evap	C Evap	4 & 5 Evap	Sump Pump	#2 Fil. Seal	Barom. Seal	#1 Vac. Cooler	Super Seal
September 1976	1	.81	.72	.73	.79	.83	.38	.02	.73	.81	
	2	.81	1.05	.81	.75	.80	1.25	.16	.75	.74	
	3	.81	.73	.82	.66	.76	.21	.02	.71	.80	
	4	.80	.72	.76	.73	.77	.19	.00	.71	.78	
	5	.80	.71	.81	.76	.76	.19	.00	.74	.75	
	6	.78	.71	.74	.69	.75	.29	.02	.91	.79	
	7	.78	.71	.73	.70	.77	.36	.07	.68	.80	
	8	.68	.74	.71	.69	.70	.51	.02	.73	.81	
	9	.74	.67	.78	.68	.72	.41	.03	.70	.74	
	10	.81	.75	.79	.74	.77	.22	.03	.82	.82	
	11	.72	.69	.68	.64	.77	.20	.12	.67	.73	
	12	.73	.67	.79	.65	.91	1.03	.10	.73	1.13	
	13	.79	.77	.80	.68	.74	.63	.33	.75	.77	
	14	.76	.74	.87	.75	.76	.38	.14	.80	.71	
	15	.76	.86	.83	.76	.77	.18	.05	.79	.77	
	16	.78	.78	.80	.72	.75	.55	.11	.73	.75	
	17	.71	.73	.79	.72	.75	.37	.02	.78	.86	
	18	.81	.75	.81	.70	.70	.43	.06	.79	.81	
	19	.81	.70	.71	.72	.81	.18	.17	.77	.77	
	20	.78	.67	.74	.66	.79	.93	.04	.75	.76	
	21	.73	.70	.79	.68	.78	.29	.04	.70	.82	
	22	.79	.73	.80	.77	.78	.58	.02	.76	.78	
	23	.82	.76	.81	.77	.80	.50	.07	.76	.80	
	24	.81	.73	.77	.71	.76	.39	.02	.73	.72	
	25	.74	.73	.84	.73	.78	.60	.06	.74	.81	
	26	.80	.72	.80	.71	.74	.68	.01	.73	.79	
	27	.77	.70	.73	.70	.72	.52	.01	.70	.73	
	28	.80	.74	.81	.69	.76	.56	.02	.73	.82	
	29	.77	.73	.79	.73	.76	.46	.04	.76	.53	
	30	.81	.78	.80	.78	.75	.43	.00	.73	.67	
	31										
Average/Month		.78	.74	.78	.72	.77	.46	.06	.75	.78	

FH0028651

MONTH October 1976	Pond H_2O	Filter Wash	A & B Evap	C Evap	4 & 5 Evap	Sump Pump	#2 Fil. Seal	Barom. Seal	#1 Vac. Cooler	Super Seal
1	.74	.77	.78	.76	.73	.40	.02	.80	.75	
2	.75	.72	.79	.64	.79	.34	.01	.72	.77	
3	.81	.68	.80	.61	.75	.32	.00	.67	.77	
4	.82	.72	.79	.65	.86	.32	.01	.51	.74	
5	.77	.73	.77	.63	.74	1.36	.05	.70	.74	
6	.72	.68	.68	.67	.71	.71	.02	.68	.73	
7	.79	.69	.62	.67	.67	.87	.02	.77	.75	
8	.76	.72	.68	.68	.69	.46	.01	.65	.78	
9	.70	.72	.76	.68	.72	.62	.02	.72	.73	
10	.72	.71	.72	.78	.71	.41	.02	.73	.74	
11	.73	.73	.71	.62	.71	.40	.02	.69	.69	
12	.82	.80	.73	.79	.73	.59	.06	.77	.82	
13	.79	.80	.87	1.04	.77	.41	.05	.75	.78	
14	.70	.80	.78	.73	.80	.42	.01	.78	.73	
15	.78	.75	.79	.66	.76	.58	.01	.68	.75	
16	.77	.74	.80	.76	.75	.29	.01	.70	.73	
17	.86	.72	.82	.68	.74	.40	.58	.76	.77	
18	.80	.98	.88	.83	.79	.70	.59	.87	.91	
19	.84	.84	.93	.80	.75	.30	.24	1.05	.77	
20	.86	.79	.92	.85	.82	.60	.01	.77	.81	
21	.85	.98	.98	.92	.85	.27	.21	.89	.84	
22	.82	.81	.84	.90	.80	.59	.00	.82	.84	
23	.87	.71	.80	.74	.80	.54	.01	.79	.83	
24	.81	.76	.82	.75	.77	.33	.03	.80	.78	
25	.88	.94	.87	.87	.80	.62	.02	.87	.85	
26	.85	1.39	.87	.91	.82	.94	.09	.82	.87	
27	.94	.93	.91	.93	.88	.67	.01	.96	.84	
28	.90	1.11	.94	1.06	.88	.90	.07	.97	.89	
29	1.00	.93	.96	.91	.88	.67	.02	.86	.82	
30	.92	.87	.94	.90	.89	.33	.04	.76	.86	
31	.93	.85	.78	.77	.78	.44	.04	.82	.66	
Average/Month	.82	.82	.82	.78	.79	.54	.07	.78	.79	

MONTH November 1976	Pond H_2O	Filter Wash	A & B Evap	C Evap	4 & 5 Evap	Sump Pump	#2 Fil. Seal	Barom. Seal	#1 Vac. Cooler	Super Seal
1	.81	.95	.92	.83	.90	-.36	.01	.81	.89	
2	.85	.91	.84	1.36	.86	.36	.00	.88	.85	
3	.90	.82	.93	.82	.88	1.13	.02	.85	.80	
4	.91	.90	.88	.83	.86	.65	.04	.95	.88	
5	.86	.82	.86	.89	.84	.31	.51	.95	.87	
6	.84	.79	.81	.90	.90	.12	-	.81	.80	
7	.81	.79	.82	1.00	.88	.09	.02	.76	.85	
8	.90	.82	.81	.91	.86	.39	.03	.74	.92	
9	.89	.79	.90	.85	.93	.38	.02	.87	.83	
10	.87	.81	.89	.81	.84	.18	.15	.89	1.07	
11	.95	.73	.86	.75	.80	.14	-	.95	.85	
12	.91	.89	.89	.85	.90	1.32	.04	.94	.89	
13	.91	.83	.96	.83	.90	1.03	.19	.87	.87	
14	.90	.85	.92	.88	.88	.76	.06	.86	.87	
15	.91	.83	.87	.84	.88	.50	.12	.90	.84	
16	.93	.94	.94	.84	.92	.48	.00	.81	.82	
17	.94	.93	.95	.83	.95	2.01	.28	.88	.87	
18	.98	1.32	.96	.78	.96	.77	.95	.90	.92	
19	1.00	.92	.88	.90	.92	.76	.01	.87	.91	
20	.92	.97	1.00	1.03	.96	1.40	.03	.87	.91	
21	1.04	.82	.86	.83	.86	.39	.01	.77	.83	
22	.92	1.01	.92	.94	.89	.19	.43	.88	.82	
23	.89	.96	.87	.77	.85	.20	.01	.90	.87	
24	.93	.92	.92	.92	.92	.36	.02	.89	.88	
25	.98	.96	.97	1.07	.92	.63	.02	1.00	.91	
26	1.00	1.12	1.03	1.05	.97	.49	.31	1.51	.96	
27	1.01	.96	.85	.90	.98	.18	.21	1.00	1.00	
28	1.02	1.09	1.00	.93	.98	.99	.08	.90	.97	
29	.98	.96	.94	.73	.97	.27	.04	.95	1.02	
30	1.03	1.07	1.02	.80	1.01	.44	-.01	1.09	1.00	-
31										
Average/Month	.93	.92	.91	.89	.91	.58	.13	.91	.89	

FH0028653

MONTH December 1976	Pond H_2O	Filter Wash	A & B Evap	C Evap	4 & 5 Evap	Sump Pump	#2 Fil. Seal	Barom. Seal	#1 Vac. Cooler	Super Seal
1	.80	.97	.90	.93	.85	.15	-	.92	.93	-
2	.98	.75	.97	.84	.98	.16	.00	.87	1.01	-
3	1.02	.89	.97	.76	.96	1.12	.02	.91	1.05	-
4	1.08	1.03	.97	1.14	1.00	.17	.03	.99	1.05	-
5	1.01	.90	.97	1.08	.93	.32	.29	.93	.92	-
6	.99	.88	.94	.85	.98	.25	.02	.97	.92	-
7	1.03	.92	.94	-	.96	.35	1.16	.90	.90	-
8	.97	.88	1.05	-	.90	.55	.17	.94	.93	-
9	.98	.93	.96	1.24	.98	.42	.01	.85	.90	-
10	1.01	1.04	1.05	1.13	.99	1.23	.00	.90	.88	-
11	.97	.95	.74	.88	.87	.32	.02	.91	.94	-
12	.98	.96	.95	.89	.91	.58	.10	.87	.89	-
13	1.03	.94	.93	1.02	.95	.24	.00	.85	.90	-
14	1.00	.92	.97	.93	.92	.42	.00	.89	.97	-
15	.95	.86	.91	-	.95	.20	.03	.86	.92	-
16	1.00	.95	1.11	.96	1.04	.54	.00	.98	1.02	-
17	1.04	1.00	1.09	1.01	1.01	.32	.01	.92	.98	-
18	1.02	1.03	1.01	.95	.92	.25	.00	.93	.99	-
19	1.04	.96	1.00	.94	.96	.30	.04	.96	.94	-
20	.98	.99	.91	.90	.85	.26	.00	.95	.88	-
21	1.01	.98	.96	.98	.61	1.18	.01	.92	.93	-
22	.94	.90	.95	1.00	.90	.32	.00	.89	.94	-
23	.97	.89	.96	.89	.98	.42	.00	.87	.91	-
24	.98	.94	.97	.86	.89	.23	.03	.86	.94	-
25	.92	.87	.94	1.01	.86	.18	.01	.91	.93	-
26	.95	.89	.89	.92	.92	.09	.01	.90	.89	-
27	.97	.89	.92	.94	.92	.27	.01	.87	.92	-
28	.95	.88	.92	.93	.94	.20	~~x~~.01	.84	.89	1.01
29	.94	.90	.81	.84	.91	.89	.04	.83	.87	.91
30	.93	.85	.88	.90	.90	.09	.03	.80	.86	.94
31	.95	.89	.89	.87	.89	.19	.05	.83	.86	.98
Average/Month	.98	.92	.96	.95	.92	.39	.07	.90	.93	.96

MONTH	Pond H_2O	Filter Wash	A & B Evap	C Evap	4 & 5 Evap	Sump Pump	#2 Fil. Seal	Barcm. Seal	#1 Vac. Cooler	Super Seal
JANUARY 1977										
1	.90	.84	.91	.90	.91	-.41	.10	.80	.87	–
2	.91	.85	.85	.75	.83	.10	.90	.78	.75	–
3	.95	.89	.97	.86	.93	.29	.03	.90	.92	–
4	.92	.87	.90	.95	.87	.52	.02	.87	.88	.46
5	.96	.93	.95	.98	.94	.05	.01	.92	.91	.95
6	.90	.85	.90	–	.90	.07	.04	.87	.84	.92
7	.90	.83	.88	.81	.83	.15	.00	.78	.82	.52
8	.87	.85	.84	.87	.82	.12	.00	.78	.80	.83
9	.85	.83	.85	.87	.80	.19	.01	.82	.82	.89
10	.88	.86	.87	.87	.84	.20	.08	.85	.86	.88
11	.88	.88	.96	.90	.85	.60	.03	.80	.83	.89
12	.89	.85	.89	.90	.92	.14	.04	.85	.90	.91
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
Average/Month	.90	.86	.90	.88	.87	.24	.03	.84	.85	.84

A.P.C. FERTILIZER COMPLEX
CONTROL LABORATORY
NON-ROUTINE ANALYSIS REQUEST AND REPORT FORM

Date Requested 11/12/74 Requested By D.L. Dahms Urgent ______ Copies D. L. DAHMS

Date Reported ______ Approved By ______ Normal ✓ To ______

Location (1)

AMPLE IDENTIFICATION			SAMPLE IDENTIFICATION			SAMPLE IDENTIFICATION			SAMPLE IDENTIFICATION		
Gypsum Pond Water											
AB. NO.			LAB NO.			LAB NO.			LAB NO.		
ANALYSES			ANALYSES			ANALYSES			ANALYSES		
. P_2O_5			T. P_2O_5			T. P_2O_5			T. P_2O_5		
.I. P_2O_5			W.I. P_2O_5			W.I. P_2O_5			W.I. P_2O_5		
.S. P_2O_5		✓ .81	W.S. P_2O_5			W.S. P_2O_5			W.S. P_2O_5		
.I P_2O_5			C.I. P_2O_5			C.I. P_2O_5			C.I. P_2O_5		
.P.A.			A.P.A.			A.P.A.			A.P.A.		
OI			LOI			LOI			LOI		
O			H_2O			H_2O			H_2O		
creen:			Screen:			Screen:			Screen:		
lids			Solids			Solids			Solids		
. G.			Sp. G.			Sp. G.			Sp. G.		
O			CaO			CaO			CaO		
O_5/CaO			P_2O_5/CaO			P_2O_5/CaO			P_2O_5/CaO		
O_2			SiO_2			SiO_2			SiO_2		
$_2O_3$			Fe_2O_3			Fe_2O_3			Fe_2O_3		
$_2O_3$			Al_2O_3			Al_2O_3			Al_2O_3		
O			MgO			MgO			MgO		
			F			F			F		
SO_4			H_2SO_4			H_2SO_4			H_2SO_4		
			N			N			N		
ee Acid			Free Acid			Free Acid			Free Acid		
her:			Other:			Other:			Other:		

COMMENTS: ______

FH0028656

A.P.C. FERTILIZER COMPLEX
CONTROL LABORATORY
NON-ROUTINE ANALYSIS REQUEST AND REPORT FORM

Date Requested Nov. 12 1977 Requested By M. GREEN Urgent ________ Copies ________

Date Reported ________ Approved By ________ Normal ✓ To ________

(Location 2)

MPLE IDENTIFICATION ypsum from pond			SAMPLE IDENTIFICATION			SAMPLE IDENTIFICATION			SAMPLE IDENTIFICATION		
B NO. 18871-77			LAB NO.			LAB NO.			LAB NO.		
ANALYSES			ANALYSES			ANALYSES			ANALYSES		
P2O5	✓	0.81	T. P_2O_5			T. P_2O_5			T. P_2O_5		
I. P_2O_5			W.I. P_2O_5			W.I. P_2O_5			W.I. P_2O_5		
S. P_2O_5			W.S. P_2O_5			W.S. P_2O_5			W.S. P_2O_5		
I P_2O_5	✓	0.06	C.I. P_2O_5			C.I. P_2O_5			C.I. P_2O_5		
P.A.			A.P.A.			A.P.A.			A.P.A.		
I			LOI			LOI			LOI		
O			H_2O			H_2O			H_2O		
reen:			Screen:			Screen:			Screen:		
lids			Solids			Solids			Solids		
. G.			Sp. G.			Sp. G.			Sp. G.		
O			CaO			CaO			CaO		
O5/CaO			P_2O_5/CaO			P_2O_5/CaO			P_2O_5/CaO		
O2			SiO_2			SiO_2			SiO_2		
2O3			Fe_2O_3			Fe_2O_3			Fe_2O_3		
2O3			Al_2O_3			Al_2O_3			Al_2O_3		
O			MgO			MgO			MgO		
			F			F			F		
SO4			H_2SO_4			H_2SO_4			H_2SO_4		
			N			N			N		
ee Acid			Free Acid			Free Acid			Free Acid		
her:			Other:			Other:			Other:		

COMMENTS: ________

FH0028657

BEKER **Interoffice Memorandum**

To: D. Dean

File Reference:

Copies To: G. Sneddon
G. Greer
D. Fleming
K. Rowles
A. Carrozelli

Date: January 24, 1977

From: Gary L. Dahms & Gardell Jensen

Department: Phos Acid and Engineering

Location: C. F. White Plant
Conda, Idaho

Subject: SUPER ACID CAPACITY - Therminol vs. Dowtherm

Attached are heating calculations showing the heat required to make the super acid under the operating conditions in 1975 with the Dowtherm heating system and under present conditions with the new Therminol system. These calculations show that the old system would have made 215 TPD of product on a P_2O_5 basis. This is actually lower than actual capacity because the old system was never pushed to full capacity.

GLD/kjp

GLD

FH0028658

SUPER ACID PRODUCTION - 1975 CONDITIONS VS. 1976 CONDITIONS

SUPER ACID PRODUCTION - 1975 CONDITIONS

Super acid was produced from 52.3% P_2O_5 acid to make 67.0% P_2O_5 super acid at a rate of 33 gpm of feed acid.

The heat required to make super acid is the sum of the heat necessary to vaporize (evaporate) the water and the heat necessary to increase the temperature of the acid.

Constants for calculations: Heat capacity, Cp (67% acid) = $\frac{0.34 \text{ Btu}}{\text{lb } ^\circ\text{F}}$

Cp (52.3% acid) = $\frac{0.42 \text{ Btu}}{\text{lb } ^\circ\text{F}}$

Specific Gravity (52.3% acid) = $1.682 \frac{\text{g}}{\text{cc}}$

enthalpy, h (water at 370°F and 3 psi) = $1225 \frac{\text{Btu}}{\text{lb}}$

Q_1 (heat to evaporate water)

$$\frac{1}{0.523} - \frac{1}{0.67} = 0.420 \frac{\text{lb } H_2O}{\text{lb } P_2O_5}$$

$$\text{Feed acid lb/hr} = 33 \frac{\text{gal}}{\text{min}} \times (1.682 \times 8.34) \frac{\text{lb}}{\text{gal}} \times \frac{60 \text{ min}}{\text{hr}} = 27{,}775 \text{ lb/hr}$$

$$P_2O_5 \text{ lb/hr} = 27{,}775 \text{ lb/hr} \times 0.523 \frac{\text{lb } P_2O_5}{\text{lb feed acid}} = 14{,}526 \text{ lb/hr } P_2O_5$$

$$\text{Water lb/hr} = 0.420 \frac{\text{lb } H_2O}{\text{lb } P_2O_5} \times 14{,}526 \frac{\text{lb } P_2O_5}{\text{hr}} = 6101 \frac{\text{lb } H_2O}{\text{hr}}$$

$$Q_1 = 6101 \frac{\text{lb } H_2O}{\text{hr}} \times 1225 \text{ Btu} = 7{,}474{,}000 \frac{\text{Btu}}{\text{hr}}$$

Q_2 (heat to bring up acid temperature)

$$Q_2 = \text{feed acid lb/hr} \times \text{log mean Cp}, \frac{\text{Btu}}{\text{lb } ^\circ\text{F}} \times \text{temp. change } (\Delta T)\ ^\circ\text{F}$$

$$Q_2 = 27{,}775 \text{ lb/hr} \times 0.379 \frac{\text{Btu}}{\text{lb } ^\circ\text{F}} \times (369 - 171.5)\ ^\circ\text{F} = 2{,}079{,}000 \frac{\text{Btu}}{\text{hr}}$$

$$\text{Total heat} = Q_1 + Q_2 = 7{,}474{,}000 \frac{\text{Btu}}{\text{hr}} + 2{,}079{,}000 \frac{\text{Btu}}{\text{hr}} = \underline{\underline{9{,}553{,}000 \frac{\text{Btu}}{\text{hr}}}}$$

SUPER ACID PRODUCTION - 1976 CONDITIONS

Super acid was produced from 55.5% P_2O_5 acid to make 68.5% P_2O_5 super acid at a rate of 38 gpm of feed acid (215 TPD product P_2O_5)

Constants for calculations: $Cp\ (68.5\%\ \text{acid}) = 0.33\ \frac{Btu}{lb\ ^oF}$

$Cp\ (55.5\%\ \text{acid}) = 0.40\ \frac{Btu}{lb\ ^oF}$

Specific Gravity $(55.5\%\ \text{acid}) = 1.70\ \frac{g}{cc}$

enthalpy, h (water at 345^o F and 1 psi) $= 1215\ \frac{Btu}{lb}$

Q_1 (heat to evaporate water

$$\frac{1}{0.555} - \frac{1}{0.685} = 0.342\ \frac{lb\ H_2O}{lb\ P_2O_5}$$

$$\text{Feed acid lb/hr} = 38\ \frac{gal}{min} \times (1.70 \times 8.34)\ \frac{lb}{gal} \times 60\ \frac{min}{hr} = 32{,}326\ \text{lb/hr}$$

$$P_2O_5\ \text{lb/hr} = 32{,}326\ \text{lb/hr} \times 0.555\ \frac{lb\ P_2O_5}{hr} = 17{,}941\ \text{lb/hr}\ P_2O_5$$

$$\text{Water lb/hr} = 0.342\ \frac{lb\ H_2O}{lb\ P_2O_5} \times 17{,}941\ \frac{lb\ P_2O_5}{hr} = 6{,}136\ \frac{lb\ H_2O}{hr}$$

$$Q_1 = 6{,}136\ \frac{lb\ H_2O}{hr} \times 1215\ \frac{Btu}{lb} = 7{,}455{,}000\ \text{Btu/hr}$$

Q_2 (heat to bring up acid temperature)

$$Q_2 = \text{feed acid lb/hr} \times \text{log mean Cp,}\ \frac{Btu}{lb\ ^oF} \times \text{temp. change}\ (\Delta T)\ ^oF$$

$$= 32{,}326\ \text{lb/hr} \times 0.364\ \frac{Btu}{lb\ ^oF} \times (345-170)\ ^oF = 2{,}059{,}000\ \frac{Btu}{hr}$$

$$\text{Total Heat} = Q_1 + Q_2 = 7{,}455{,}000\ \frac{Btu}{hr} + 2{,}059{,}000\ \frac{Btu}{hr} = \underline{\underline{9{,}514{,}000\ \frac{Btu}{hr}}}$$

COMPARISON OF HEAT INPUT, Btu/hr

1975 Conditions	1976 Conditions
9,553,000	9,514,000

Beker Industries Corp.
124 West Putnam Avenue, Greenwich, Connecticut 06830
Telephone: 203/622-5700, TWX 710-579-2918
Telex 96-58-62

February 25, 1977

Mr. C. C. Kosky
General Adjuster
Factory Mutual Engineering
1511 East Whittier Blvd.
Room 480
Los Angeles, California 90603

Re: Beker Industries Corp. - Soda Springs, Idaho
Index #79228.61 - Acct. #26-38812
Loss #F-92-Y - January 3, 1976
Loss #NPC-01220 - March 3, 1976

Dear Mr. Kosky:

We have your February 14 letter on the above which takes up both the fire loss and gyp pond failure.

Concerning the dowtherm loss, Mr. Wilson is now preparing the 1976 forecast for Region IV, the market utilization report and a comparison of SPA versus 52/54 sales by customer; items #1, #2, and #3 of your letter (pp. 1 - par. 2).

In addition, Mr. Wilson has prepared the letters to customers (item #6 - pp. 2) concerning your upcoming inquiries along the lines suggested by Dave Streiff; that is, he will prepare letters to various customers in the form of an authorization for attachment to Dave Streiff's cover letter containing his specific inquiries.

Re-computation of sales and income arising out of other products in lieu of SPA production (pp. 1 - par. 2 - item #1) will be submitted either to your attention or Dave Streiff; last November, we submitted our initial figures on this directly to Dave Streiff.

We do not recall discussing the question under item #2 - paragraph 2 - "engineering and other data relative to the July shutdown"; however, by copy of this letter, we have asked Don Dean to prepare any information relative to this. Don Dean has already responded to the question of plant shutdowns (item #3) for 1976 in part to Doug Flint of Tafco; this was submitted in the form requested by Mr. Flint.

Item #4, manufacturing costs of SPA will be prepared in Greenwich and submitted shortly. We do not recall discussing item #7 on page 2 concerning monthly statement of operations for 1976; however, we see no reason why this cannot be provided by copies of monthly reports; this will be included with information prepared out of Greenwich.

Items #1, #2 and #3 on page 2 relating to the fire loss (#F-92-Y) has largely been summarized by Don Dean in his communications with Doug Flint and, by copy of this letter, we have asked Mr. Dean to address himself to these specific points by memo.

Lastly, with regard to the shipments and car availability, we will endeavor to obtain the car information (item #5 on page 3) although it was our impression that we had resolved the car availability on the basis of supporting correspondence from Occidental during our meeting on January 12. Concerning the bills of lading and other information (item #4 page 3) we have asked Don Dean to coordinate the necessary back-up data; again, this aspect did not specifically come up at the last meeting and it was our impression that Occidental's indication that we had a total of 55 cars available (20 under lease and 35 additional on request) and, further, that we demonstrated this number of cars could handle the production of approximately 14,000 tons, etc., the traffic question was resolved.

Your comments relating to the gyp pond failure are items #1 - #5, page 2 and the first item on page 2. Response to items #1, #2 and #3 in the second paragraph (items #1 and #3 are essentially the same) have been prepared by Don Dean and communicated directly to Doug Flint; item #3 - "complete well water analysis"- was not asked for at the meeting and we have asked Don Dean to clarify this point with Doug Flint as soon as possible in addition to item #5; in the latter instance it was our understanding that data relating to use of meters would be provided to us. In any case, we will endeavor to provide as much additional information beyond Gary Dahms' comprehensive reports of December 28, 1976 and January 20, 1977. In this connection, the data already provided by Gary Dahms has not been technically contradicted. It was my understanding that Mr. Flint was prepared to accept the supporting evidence of P205 recovery to the extent we claimed (approximately 3992 tons) short of conducting an expensive text procedure providing we agree to follow certain steps to be suggested by Mr. Flint.

A breakdown on the 117.01 valuation placed on the P205 in the pond will be prepared by this office as was the initial figure applied against the lost tonnage.

We note you have not addressed yourself to the remaining segment of this loss, the dike failure, and it is my understanding that Hal Wales is reviewing the figures submitted at our last meeting (Dave Best's January 12, 1977 memorandum - copy attached).

In summary, it is suggested that while we are coordinating the above data between this office and the plant, you contact Doug Flint with regard to the requested information he has already received. We have arranged with Don Dean to submit additional supporting documents resulting out of this correspondence directing to Doug Flint with a copy of his cover letter to my attention. At the same time the information out of Greenwich will be submitted directly to your attention unless you advise otherwise.

Your continued assistance and cooperation with regard to these matters is appreciated.

Very truly yours,

Alex F. Carrozelli
Corporate Risk and
Insurance Manager

AFC:jlc
Attachments

CC: J. Asche
J. Fitteron
E. Krick
G. Leylegian
R. Rossi
R. Russo
L. Tessier
R. Wilson

D. Dean - Conda
G. Sneddon - Conda

E. Baker — Factory Mutual Engineering
650 Las Gallinas Avenue
San Rafael, California 94903

D. Flint — Tafco Inc.
6910 Oslo Circle
Buena Park, California 90621

D. Streiff — William K. Kinsel Corp.
520 South LaFayette Park Plaza
Suite 222
Los Angeles, California 90057

H. Wales, Jr. — H. E. Wales & Associates Inc.
312 South Palm Avenue
Alhambra, California 91803

71 80

BCKCR

Interoffice Memorandum

To: Alex Carrozelli

File Reference:

Copies To: G. Sneddon
G. Greer
G. Dahms
D. Fleming
D. Best
K. Rowles
D. Flint

Date: February 25, 1977

✓ **From:** Donald K. Dean

Department: Plant Administration

Location: C. F. White Plant
Conda, Idaho

Subject:

The following is an item by item reply to the plant's portion of Mr. C.C. Kosky's letter dated February 14, 1977.

Per our original agreement, all data requested will be forwarded directly to Mr. Flint with his copy of this memo.

The only plant item not covered in this memo is item #4 on page 3, concerning bills of lading, Kirk Rowles is working directly with the Traffic Department on this.

Page 1:

Second Item #2 - The request is ambiguous and we do not understand the scope or intention of the request.

Second Item #3 - We assume this request concerns the superacid unit, although not specified, per agreement with Mr. Flint we sent him a tabulation of downtime broken into two categories:

1. All mechanical downtime
2. Lack of cars

At the time of the meeting this was agreed adequate for Mr. Flint's purpose and some time was spent analyzing the individual downtime reports. As agreed, the original downtime reports are available upon request.

Page 2:

First Item #1 - Per the last meeting, our numbers on the pond water volume and Mr. Flint's numbers on the pond water volume differed only by 10% and was not a point of contest. Neither number was based on adequate surveys and since the gyp has now been removed there is no way to compute another number.

First Item #2 - We are sending to Mr. Flint a copy of an analysis made on the pond water after the dike failed, but before the pond drained. Also, we previously sent him two analyses made of clear water before the dike failure. (These may have been mislabeled as cooling pond water when sent originally). No other samples are available before the break, nor after, as we do not routinely sample at this pond.

FH0028664

Alex Carrozelli
February 25, 1977
Page Two

First Item #3 - We have previously sent Mr. Flint a yearly average by month (based on 3 samples daily) of P_2O_5 only on the pond water. We are presently sending him all monthly composites available for 1976 on the pond water which lists trace elements.

Item #4 - We do not remember the original request, but we are presently sending Mr. Flint a complete copy of our well water analysis file.

Item #5 - We previously submitted 3 typical pond water balances indicating 1) rising level, 2) dropping level, 3) maintaining level. We have demonstrated we can and must run under all three of these conditions during the year.

The request to perform an actual measured water balance was based on Mr. Flint's notifying us of a moveable, externally connected water meter. It is my understanding that this meter did not prove feasible. As it would cost in excess of $20,000 to install permanent meters and cause some plant downtime we do not feel the expenditure is necessary because no one has really reputed the original 3 cases submitted by Mr. Dahms.

Second Item #1 - This data has previously been sent to Mr. Flint.

Second Item #2 - No downtime reports were kept on this unit during 1975 because it was not an operating unit. When it was run, it was used only to supplement evaporation in the Phos Acid unit.

Second Item #3

a) Pre-fire 68% SPA - one previous analysis was given to Mr. Flint. This was the only time 68% acid was made before the fire and as stated above, it was used as a regular evaporator.

b) We did not produce any uncentrifuged SPA in April - the units were started up together.

c) Enclosed are copies of all monthly composites of super acid for 1976 plus a copy of the analysis on every car shipped.

d) The second centrifuge has never been installed (it is due March 1, 1977).

e) The in-line filter has no effect on product acid as it is installed upstream of the centrifuge, therefore, the data would be the same as C.

April 24, is the date both the super unit and the centrifuge were put in operation.

DKD/kjp